### CUS350MP-1000/T

#### SPECIFICATIONS (1/2)

#### PA644-01-01/T-A

	ITEMS			MODEL		CUS350MP-1000-24 /T	CUS350MP-1000-30 /T	CUS350MP-1000-36 /T	CUS350MP-1000- /T
NPU	ITEMS					/1	/ 1	/ 1	/1
INPU					r –				
	Input Voltage Range (*5)(*15)					8	85 - 265VAC (47 - 63		2
	Efficiency	Conv	vection cooling	100/115VAC	%		90/	91	
			(Typ.) (*2)	200/230VAC	%		93/	94	
		Forc	ed air cooling	100/115VAC	%		90/	91	
			(Tvp.) (*3)	200/230VAC	%	93/94			
	Input Current Con		vection cooling	100/115VAC	А	4.0/3.6			
	1		(Typ.) (*2) 200/230VAC A 2.0/1.7						
					A				
			ced air cooling 100/115VAC			5.7/4.9			
	(Typ.) (*3) 200/230VAC			Α					
	Inrush Current (Typ) (*4)(*6) 100/200VAC				Α	15/30 at 1st Inrush, 30/30 at 2nd Inrush			
	PFHC (*4)			-	Designed to meet IEC61000-3-2				
	Power Factor (Typ) (*4) 100/200VAC			-	0.98/0.93				
OUT	TPUT								
					V	24	30	36	48
	Nominal Output Voltage Output Voltage Setting Accuracy (*18)					21	±1		10
					-	14.6			= -
	Maximum Output Curre	ent	Convection cooling		Α	14.6	11.65	9.7	7.3
			Forced air coolin	g	Α	20.8	16.6	13.8	10.4
	Peak Output Current			(*1)	Α	41.7	33.3	27.7	20.9
	Maximum Output Powe	er	Convection cooli	ng	W	350.4	349.5	349.2	350.4
	1		Forced air coolin	-	W	499.2	498.0	496.8	499.2
	Peak Output Power		- oreed an eoonii	<u>s</u> (*1)	W	1000.8	999.0	997.2	1003.2
	1								
	Maximum Line Regulat			(*7)(*8)		96	120	144	192
	Maximum Load Regula	ation		(*7)(*9)	mV	192	240	288	384
	Temperature Coefficier	nt		· · ·	-		Less than (	0.02% / °C	
	Maximum Ripple & No			0≤Ta≤50°C	-	1% of output voltage			
			(*7)		-		2% of outp		
	Outrast Wilter P		(*/)	-20 <u>~</u> 1a~0°C		24.0. 26.4	1	36.0 - 42.0	45.0 - 48.0
	Output Voltage Range				V	24.0 - 26.4	27.0 - 30.0		45.0 - 48.0
	Hold-up Time		Convection cooli	ng (Typ.)(*2)	ms		20		
			Forced air coolin	g (Typ.) (*3)	ms		1:	5	
	Leakage Current			(*12)	-		Less that	n 0.3mA	
	Over Current Protection	n		(*10)	А	42.2 -	33.7 -	28.0 -	21.2 -
	Over Voltage Protection			(*11)	V	28.1 -	31.1 -	44.1 -	50.1 -
	-	п		(*11)	v	20.1 -	51.1 -	44.1 -	30.1 -
UN	CTION					1			
	Remote ON/OFF Control (*16)				-		Poss	ible	
	Remote Sensing								
1	Remote Sensing				-		No	ne	
	Parallel Operation				-		No No		
	ě			(*16)	-			ne	
	Parallel Operation Series Operation			(*16)	-		No Poss	ne ible	
NIX.	Parallel Operation Series Operation Standby Supply			(*16)	-		No	ne ible	
ENV	Parallel Operation Series Operation Standby Supply IRONMENT				-		No Poss 5V / (	ne ible ).3A	
NV	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature	;		(*16)	-		No Poss 5V / / -20 - +	ne ible 0.3A -70°C	
NV	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature	;			-		No Poss 5V / / -20 - + -30 - +	ne ible 0.3A -70°C -75°C	
NV	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature	;			-		No Poss 5V / / -20 - +	ne ible 0.3A -70°C -75°C	
NV	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature	;			-		No Poss 5V / / -20 - + -30 - +	ne ible 0.3A -70°C -75°C o Condensing)	
NV	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity Storage Humidity	;		(*13)	- - - - -		No Poss 5V / / -20 - 4 -30 - 4 30 - 90%RH (N 30 - 90%RH (N	ne ible 0.3A -70°C -75°C o Condensing) o Condensing)	)
INV	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity	;			- - - - -		No Poss 5V / / -20 - + -30 - + 30 - 90%RH (N 30 - 90%RH (N 30 - 90%RH (N	ne ible 0.3A -70°C -75°C o Condensing) o Condensing) 5Hz (Sweep for 1min	)
ENV	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity Storage Humidity Vibration	,		(*13)	- - - - -		No Poss 5V / / -20 - + -30 - + 30 - 90%RH (N 30 - 90%RH (N 30 - 90%RH (N 30 - 90%RH (N 10 - 5 19.6m/s <sup>2</sup> Constant,	ne ible 0.3A -70°C -75°C o Condensing) o Condensing) 5Hz (Sweep for 1min X,Y,Z 1hour each.	)
ENV	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity Storage Humidity Vibration Shock	;		(*13) (*17) (*17)	- - - - - - - - - - - -		No Poss 5V / / -20 - + -30 - + 30 - 90%RH (N 30 - 90%RH (N 30 - 90%RH (N 30 - 90%RH (N 10 - 5 19.6m/s <sup>2</sup> Constant, Less than 196.1m/s <sup>2</sup>	ne ible 0.3A 70°C 75°C o Condensing) o Condensing) 5Hz (Sweep for 1min X,Y,Z 1hour each. i (time : 11 ± 5 ms)	)
	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity Storage Humidity Vibration Shock Cooling	;		(*13)	- - - - - - - - - - - -		No Poss 5V / / -20 - + -30 - + 30 - 90%RH (N 30 - 90%RH (N 30 - 90%RH (N 30 - 90%RH (N 10 - 5 19.6m/s <sup>2</sup> Constant,	ne ible 0.3A 70°C 75°C o Condensing) o Condensing) 5Hz (Sweep for 1min X,Y,Z 1hour each. i (time : 11 ± 5 ms)	)
	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity Storage Humidity Vibration Shock	> 		(*13) (*17) (*17)	- - - - - - - - - - - -		No Poss 5V / / -20 - + -30 - + 30 - 90%RH (N 30 - 90%RH (N 30 - 90%RH (N 30 - 90%RH (N 10 - 5 19.6m/s <sup>2</sup> Constant, Less than 196.1m/s <sup>2</sup>	ne ible 0.3A 70°C 75°C o Condensing) o Condensing) 5Hz (Sweep for 1min X,Y,Z 1hour each. i (time : 11 ± 5 ms)	)
	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity Storage Humidity Vibration Shock Cooling ATION	;		(*13) (*17) (*17)	- - - - - - - - - - - -		No Poss 5V / / -20 - + -30 - + 30 - 90%RH (N 30 - 90%RH (N 30 - 90%RH (N 30 - 90%RH (N 10 - 5 19.6m/s <sup>2</sup> Constant, Less than 196.1m/s <sup>2</sup>	ne ible 0.3A 70°C 75°C o Condensing) o Condensing) 5Hz (Sweep for 1min X,Y,Z 1hour each. i (time : 11 ± 5 ms) / Forced air cooling	-
	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity Storage Humidity Vibration Shock Cooling	;		(*13) (*17) (*17)	- - - - - - - - - - - - - - - - -	Input - FG : 2.0kVAC	No Poss 5V / ( -20 - + -30 - + 30 - 90%RH (N 30 - 90%RH (N 30 - 90%RH (N 30 - 90%RH (N to operating, 10 - 5 19.6m/s <sup>2</sup> Constant, Less than 196.1m/s <sup>2</sup> Convection Cooling	ne ible 0.3A 70°C 75°C o Condensing) o Condensing) 5Hz (Sweep for 1min X,Y,Z 1hour each. i (time : 11 ± 5 ms) / Forced air cooling put - Output : 4.0kV/	AC (10mA) 2xM0
	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity Storage Humidity Vibration Shock Cooling ATION Withstand Voltage	;		(*13) (*17) (*17)	- - - - - - - - - - - - - - - - -	Input - FG : 2.0kVAC	No Poss 5V / / -20 - 4 -30 - 4 30 - 90%RH (N 30 - 90%RH (N 30 - 90%RH (N 30 - 90%RH (N 30 - 90%RH (N 5 19.6m/s <sup>2</sup> Constant, Less than 196.1m/s <sup>2</sup> Convection Cooling C (10mA) 1xMOPP, Ir put - FG : 1.5kVAC (2	ne ible 0.3A 70°C 75°C o Condensing) o Condensing) 5Hz (Sweep for 1min X,Y,Z 1hour each. i (time : 11 ± 5 ms) / Forced air cooling put - Output : 4.0kV/ 0mA) 1xMOPP for 1	AC (10mA) 2xMC
501	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity Storage Humidity Vibration Shock Cooling ATION Withstand Voltage Isolation Resistance			(*13) (*17) (*17)	- - - - - - - - - - - - - - - - -	Input - FG : 2.0kVAC	No Poss 5V / ( -20 - + -30 - + 30 - 90%RH (N 30 - 90%RH (N 30 - 90%RH (N 30 - 90%RH (N to operating, 10 - 5 19.6m/s <sup>2</sup> Constant, Less than 196.1m/s <sup>2</sup> Convection Cooling	ne ible 0.3A 70°C 75°C o Condensing) o Condensing) 5Hz (Sweep for 1min X,Y,Z 1hour each. i (time : 11 ± 5 ms) / Forced air cooling put - Output : 4.0kV/ 0mA) 1xMOPP for 1	AC (10mA) 2xMC
501	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity Storage Humidity Vibration Shock Cooling ATION Withstand Voltage Isolation Resistance NDARD AND COMPLI		E	(*13) (*17) (*17)	- - - - - - - - - - - - - - - - -	Input - FG : 2.0kVAC Outp More than	No   Poss   5V / 1   -20 - 1   -30 - 30 - 4   30 - 90%RH (N   20 - 90%RH (N   30 - 90%RH (N   5 (100MΩ) 1 × MOPP, Ir   put - FG : 1.5kVAC (2   100MΩ at 25°C and 7	ne ible 0.3A $70^{\circ}C$ o Condensing) o Condensing) 5Hz (Sweep for 1min X,Y,Z 1hour each. $\frac{1}{2}$ (time : $11 \pm 5$ ms) / Forced air cooling put - Output : $4.0 \text{kV}/2$ 20mA 1xMOPP for 1 $20^{\circ}\text{RH}$ Output - FG	AC (10mA) 2xM0 Imin : 500VDC
SOI	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity Storage Humidity Vibration Shock Cooling ATION Withstand Voltage Isolation Resistance		E	(*13) (*17) (*17)	- - - - - - - - - - - - - - - - -	Input - FG : 2.0kVAC Outp More than Approved	No   Poss   5V / 1   -20 - 1   -30 - 3   30 - 90%RH (N   30 - 90%RH (N   30 - 90%RH (N   30 - 90%RH (N   st no operating, 10 - 5   19.6m/s² Constant,   Less than 196.1m/s²   Convection Cooling   C (10mA) 1xMOPP, Ir   put - FG : 1.5kVAC (2   100MΩ at 25°C and 7   d by IEC/EN/UL/CSA	ne ible $70^{\circ}C$ $75^{\circ}C$ o Condensing) o Condensing) 5Hz (Sweep for 1min X,Y,Z 1hour each. <sup>4</sup> (time : 11 ± 5 ms) / Forced air cooling put - Output : 4.0kV/ 20mA) 1xMOPP for 1 20%RH Output - FG 62368-1 (Altitude $\leq$	AC (10mA) 2xM0 Imin : 500VDC 5,000m)
SOI	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity Storage Humidity Vibration Shock Cooling ATION Withstand Voltage Isolation Resistance NDARD AND COMPLI		E	(*13) (*17) (*17)	- - - - - - - - - - - - - - - - -	Input - FG : 2.0kVAC Outp More than Approved	No   Poss   5V / 1   -20 - 1   -30 - 30 - 4   30 - 90%RH (N   20 - 90%RH (N   30 - 90%RH (N   5 (100MΩ) 1 × MOPP, Ir   put - FG : 1.5kVAC (2   100MΩ at 25°C and 7	ne ible $70^{\circ}C$ $75^{\circ}C$ o Condensing) o Condensing) 5Hz (Sweep for 1min X,Y,Z 1hour each. <sup>4</sup> (time : 11 ± 5 ms) / Forced air cooling put - Output : 4.0kV/ 20mA) 1xMOPP for 1 20%RH Output - FG 62368-1 (Altitude $\leq$	AC (10mA) 2xM0 Imin : 500VDC 5,000m)
SOI	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity Storage Humidity Vibration Shock Cooling ATION Withstand Voltage Isolation Resistance NDARD AND COMPLI		E	(*13) (*17) (*17)	- - - - - - - - - - - - - - - - -	Input - FG : 2.0kVAC Outj More than Approved Approved	No   Poss   5V / 1   -20 - 1   -30 - 3   30 - 90%RH (N   30 - 90%RH (N   30 - 90%RH (N   30 - 90%RH (N   st no operating, 10 - 5   19.6m/s² Constant,   Less than 196.1m/s²   Convection Cooling   C (10mA) 1xMOPP, Ir   put - FG : 1.5kVAC (2   100MΩ at 25°C and 7   d by IEC/EN/UL/CSA	ne ible $70^{\circ}C$ $75^{\circ}C$ o Condensing) o Condensing) 5Hz (Sweep for 1min X,Y,Z 1hour each. (time : 11 ± 5 ms) / Forced air cooling put - Output : 4.0kV/ $10^{\circ}RH$ Output - FG $10^{\circ}RH$ Output - FG $10^{\circ}RH$ Output - FG	AC (10mA) 2xMC Imin : 500VDC 5,000m) 4,000m)
SOI	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity Storage Humidity Vibration Shock Cooling ATION Withstand Voltage Isolation Resistance NDARD AND COMPLI		E	(*13) (*17) (*17)	- - - - - - - - - - - - - - - - -	Input - FG : 2.0kVAC Outj More than Approved Approved	No Poss 5V / 1 -20 - 4 -30 - 4 30 - 90%RH (N 30 - 90%RH (N	ne ible $70^{\circ}C$ $75^{\circ}C$ o Condensing) o Condensing) SHz (Sweep for 1min X,Y,Z 1hour each. (time : 11 ± 5 ms) / Forced air cooling put - Output : 4.0kV/ $120^{\circ}RH$ Output - FG $120^{\circ}RH$ Output - FG $120^{\circ}RH$ Output - FG $120^{\circ}RH$ Output - FG $120^{\circ}RH$ Output - S $120^{\circ}RH$ Output - S $120^{\circ}RH$ Output - S $10^{\circ}RH$ Output - S	AC (10mA) 2xMC Imin : 500VDC 5,000m) 4,000m) 5,000m)
501	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity Storage Humidity Vibration Shock Cooling ATION Withstand Voltage Isolation Resistance NDARD AND COMPLI Safety			(*13) (*17) (*17) (*13)	- - - - - - - - - - - - - - - - -	Input - FG : 2.0kVAC Outj More than Approved Approved Designed to meet 1	No Poss 5V / 1 -20 - 4 -30 - 1 30 - 90%RH (N 30 - 90%RH (N 5 - 19.6m/s <sup>2</sup> Constant, Less than 196.1m/s <sup>2</sup> Convection Cooling C (10mA) 1xMOPP, Ir put - FG : 1.5kVAC (2 100MΩ at 25°C and 2 d by IEC/EN/UL/CSA d by IEC/EN/ES/CSA by IEC/EN62477-1 Den-an appendix 8 at	ne ible ible 0.3A $70^{\circ}C$ o Condensing) o Condensing) o Condensing) SHz (Sweep for 1min X,Y,Z 1hour each. <sup>1</sup> (time : 11 ± 5 ms) / Forced air cooling put - Output : 4.0kV/ 0mA) 1xMOPP for 1 10%RH Output - FG 62368-1 (Altitude $\leq$ 60601-1 (Altitude $\leq$ 100VAC (creepage dista	AC (10mA) 2xMC Imin : 500VDC 5,000m) 4,000m) 5,2,000m) nce and clearance only
SOI	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity Storage Humidity Vibration Shock Cooling ATION Withstand Voltage Isolation Resistance NDARD AND COMPLI		Convection cooli	(*13) (*17) (*17) (*13) ng (*14)	- - - - - - - - - - - - - - - - -	Input - FG : 2.0kVAC Outj More than Approved Approved Designed to meet I Designed to meet I	No Poss 5V / 1 -20 - 4 -30 - 1 30 - 90%RH (N 30 - 90%RH (N 52 Constant, Less than 196.1m/s' Convection Cooling C (10mA) 1xMOPP, Ir put - FG : 1.5kVAC (2 100MΩ at 25°C and 5 d by IEC/EN/UL/CSA d by IEC/EN/ES/CSA by IEC/EN62477-1 Den-an appendix 8 at o meet EN55011/EN5	ne ible ible 0.3A $70^{\circ}C$ o Condensing) o Condensing) SHz (Sweep for 1min X,Y,Z 1hour each. <sup>1</sup> (time : 11 ± 5 ms) / Forced air cooling put - Output : 4.0kV/ 0mA) 1xMOPP for 1 10%RH Output - FG 62368-1 (Altitude $\leq$ 60601-1 (Altitude $\leq$ 100VAC (creepage dista 55032-B, FCC-ClassE	AC (10mA) 2xMC Imin : 500VDC 5,000m) 4,000m) 5,2,000m) nce and clearance only 3, VCCI-B
SOI	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity Storage Humidity Vibration Shock Cooling ATION Withstand Voltage Isolation Resistance NDARD AND COMPLI Safety Conducted Emission		Convection cooli Forced air coolin	(*13) (*17) (*17) (*13) (*13) g (*14)		Input - FG : 2.0kVAC Out More than Approved Approved Designed to meet I Designed t	No   -20 - 4   -30 - 4   -30 - 90%RH (N   30 - 90%RH (N   Convection Cooling   C (10mA) 1xMOPP, Ir   put - FG : 1.5kVAC (2   100MΩ at 25°C and 5   d by IEC/EN/UL/CSA   d by IEC/EN/UL/CSA   by IEC/EN62477-1   Den-an appendix 8 at   to meet EN55011/EN5   o meet EN55011/EN5	ne ible ible 0.3A $70^{\circ}C$ $75^{\circ}C$ o Condensing) o Condensing) SHz (Sweep for 1min X,Y,Z 1hour each. (time : 11 ± 5 ms) / Forced air cooling put - Output : 4.0kV/ 20mA) 1xMOPP for 1 20%RH Output - FG 62368-1 (Altitude $\leq$ 60601-1 (Altitude $\leq$ 6000C III) (Altitude $\leq$ 100VAC (creepage dista 55032-B, FCC-ClassF 5032-A, FCC-ClassF	AC (10mA) 2xMC Imin : 500VDC 5,000m) 4,000m) 5,2,000m) nce and clearance only 3, VCCI-B A, VCCI-A
SOI	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity Storage Humidity Vibration Shock Cooling ATION Withstand Voltage Isolation Resistance NDARD AND COMPLI Safety		Convection cooli	(*13) (*17) (*17) (*13) (*13) g (*14)	- - - - - - - - - - - - - - - - -	Input - FG : 2.0kVAC Out More than Approved Approved Designed to meet I Designed t	No Poss 5V / 1 -20 - 4 -30 - 1 30 - 90%RH (N 30 - 90%RH (N 52 Constant, Less than 196.1m/s' Convection Cooling C (10mA) 1xMOPP, Ir put - FG : 1.5kVAC (2 100MΩ at 25°C and 5 d by IEC/EN/UL/CSA d by IEC/EN/ES/CSA by IEC/EN62477-1 Den-an appendix 8 at o meet EN55011/EN5	ne ible ible 0.3A $70^{\circ}C$ $75^{\circ}C$ o Condensing) o Condensing) SHz (Sweep for 1min X,Y,Z 1hour each. (time : 11 ± 5 ms) / Forced air cooling put - Output : 4.0kV/ 20mA) 1xMOPP for 1 20%RH Output - FG 62368-1 (Altitude $\leq$ 60601-1 (Altitude $\leq$ 6000C III) (Altitude $\leq$ 100VAC (creepage dista 55032-B, FCC-ClassF 5032-A, FCC-ClassF	AC (10mA) 2xMC Imin : 500VDC 5,000m) 4,000m) 5,2,000m) nce and clearance only 3, VCCI-B A, VCCI-A
SOI	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity Storage Humidity Vibration Shock Cooling ATION Withstand Voltage Isolation Resistance NDARD AND COMPLI Safety Conducted Emission		Convection cooli Forced air coolin	(*13) (*17) (*17) (*13) (*13) g (*14) ng (*14)		Input - FG : 2.0kVAC Out More than Approved Approved Designed to meet 1 Designed t Designed t	No   -20 - 4   -30 - 4   -30 - 90%RH (N   30 - 90%RH (N   Convection Cooling   C (10mA) 1xMOPP, Ir   put - FG : 1.5kVAC (2   100MΩ at 25°C and 5   d by IEC/EN/UL/CSA   d by IEC/EN/UL/CSA   by IEC/EN62477-1   Den-an appendix 8 at   to meet EN55011/EN5   o meet EN55011/EN5	ne ible ible 0.3A $-70^{\circ}C$ o Condensing) o Condensing) SHz (Sweep for 1min X,Y,Z 1hour each. (time : $11 \pm 5$ ms) / Forced air cooling put - Output : 4.0kV/ 20mA) 1xMOPP for 1 70%RH Output - FG 62368-1 (Altitude $\leq$ 60601-1 (Altitude $\leq$ 60601-1 (Altitude $\leq$ 100VAC (creepage dista 5032-B, FCC-Classef 5032-B, FCC-Classef 5032-B, FCC-Classef 5032-B, FCC-Classef	AC (10mA) 2xM0 lmin : 500VDC 5,000m) 4,000m) i 2,000m) nce and clearance only 3, VCCI-B A, VCCI-A 3, VCCI-B
501	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity Storage Humidity Vibration Shock Cooling ATION Withstand Voltage Isolation Resistance NDARD AND COMPLI Safety Conducted Emission Radiated Emission		Convection cooli Forced air coolin Convection cooli	(*13) (*17) (*17) (*13) (*13) g (*14) g (*14) g (*14) g (*14)		Input - FG : 2.0kVAC Outp More than Approved Approved Designed to meet 1 Designed to meet 1 Designed t Designed t	No Poss 5V / 1 -20 - 4 -30 - 4 -30 - 90%RH (N 30 - 90%RH (N 30 - 90%RH (N tno operating, 10 - 5 19.6m/s <sup>2</sup> Constant, Less than 196.1m/s <sup>2</sup> Convection Cooling C (10mA) 1xMOPP, Ir put - FG : 1.5kVAC (2 100MQ at 25°C and 5 d by IEC/EN/UL/CSA d by IEC/EN/ES/CSA by IEC/EN/ES/CSA by IEC/EN62477-1 Den-an appendix 8 at 0 meet EN55011/EN5 0 meet EN55011/EN5 0 meet EN55011/EN5 0 meet EN55011/EN5	ne ible ible 0.3A $-70^{\circ}C$ o Condensing) o Condensing) o Condensing) 5Hz (Sweep for 1min X,Y,Z 1hour each. (time : $11 \pm 5$ ms) / Forced air cooling put - Output : 4.0kV/ (0mA) 1xMOPP for 1 70%RH Output - FG 62368-1 (Altitude $\leq$ 60601-1 (Altitude $\leq$ 60601-1 (Altitude $\leq$ 60601-1 (Altitude $\leq$ 100VAC (creepage dista 5032-B, FCC-Classef 5032-A, FCC-Classef 5032-A, FCC-Classef 5032-A, FCC-Classef	AC (10mA) 2xM0 1min : 500VDC 5,000m) 4,000m) c 2,000m) nce and clearance only 3, VCCI-B A, VCCI-A 3, VCCI-B A, VCCI-A
SOI	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity Storage Humidity Vibration Shock Cooling ATION Withstand Voltage Isolation Resistance NDARD AND COMPLI Safety Conducted Emission		Convection cooli Forced air coolin Convection cooli	(*13) (*17) (*17) (*13) (*13) g (*14) ng (*14)		Input - FG : 2.0kVAC Outp More than Approved Approved Designed to meet 1 Designed to meet 1 Designed t Designed t	No Poss 5V / 1 -20 - 4 -30 - 4 -30 - 90%RH (N 30 - 90%RH (N 30 - 90%RH (N 30 - 90%RH (N tno operating, 10 - 5 19.6m/s <sup>2</sup> Constant, Less than 196.1m/s <sup>2</sup> Convection Cooling C (10mA) 1xMOPP, Ir put - FG : 1.5kVAC (2 100MQ at 25°C and 5 d by IEC/EN/UL/CSA d by IEC/EN/UL/CSA d by IEC/EN/ES/CSA by IEC/EN/2477-1 Den-an appendix 8 at 0 meet EN55011/EN5 0 meet EN5501 meet EN5501 0 meet EN5501 meet EN5501 meet EN5501 meet EN5501 meet EN5501 meet EN	ne ible ible 0.3A $-70^{\circ}C$ o Condensing) o Condensing) o Condensing) 5Hz (Sweep for 1min X,Y,Z 1hour each. (time : $11 \pm 5$ ms) / Forced air cooling put - Output : 4.0kV/ (0mA) 1xMOPP for 1 70%RH Output - FG 62368-1 (Altitude $\leq$ 60601-1 (Altitude $\leq$ 60601-1 (Altitude $\leq$ 60601-1 (Altitude $\leq$ 100VAC (creepage dista 5032-B, FCC-Classef 5032-A, FCC-Classef 5032-B, FCC-Classef 503	AC (10mA) 2xM0 1min : 500VDC 5,000m) 4,000m) c 2,000m) nce and clearance only 3, VCCI-B A, VCCI-A 3, VCCI-B A, VCCI-A
SOI	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity Storage Humidity Vibration Shock Cooling ATION Withstand Voltage Isolation Resistance NDARD AND COMPLI Safety Conducted Emission Radiated Emission Immunity		Convection cooli Forced air coolin Convection cooli	(*13) (*17) (*17) (*13) (*13) g (*14) g (*14) g (*14) g (*14)		Input - FG : 2.0kVAC Outy More than Approved Approved Designed to meet 1 Designed to Designed to Designed to Designed to	No   -20 - 4   -30 - 4   -30 - 90%RH (N   30 - 90%RH (N   tho operating, 10 - 5   19.6m/s <sup>2</sup> Constant,   Less than 196.1m/s <sup>2</sup> Convection Cooling   C (10mA) 1xMOPP, Ir   put - FG : 1.5kVAC (2   100MΩ at 25°C and 7   d by IEC/EN/LL/CSA   d by IEC/EN/ES/CSA   by IEC/EN/SO concet EN55011/ENS   o meet EN55011/ENS	ne ible ible 0.3A $-70^{\circ}C$ $-75^{\circ}C$ o Condensing) o Condensing) 5Hz (Sweep for 1min X,Y,Z 1hour each. (time : $11 \pm 5$ ms) / Forced air cooling put - Output : 4.0kV/ 20mA) 1xMOPP for 1 20%RH Output - FG $-62368-1$ (Altitude $\leq$ $60601-1$ (Altitude $\leq$ $60601-1$ (Altitude $\leq$ $60601-1$ (Altitude $\leq$ 100VAC (creepage dista 5532-B, FCC-Class/ 5532-A, FCC-Class/ 5	AC (10mA) 2xMO min : 500VDC 5,000m) 4,000m) 2,000m) nee and clearance only 3, VCCI-B 4, VCCI-A 3, VCCI-A 3, VCCI-A -5, -6, -8, -11
SOI	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity Storage Humidity Vibration Shock Cooling ATION Withstand Voltage Isolation Resistance NDARD AND COMPLI Safety Conducted Emission Radiated Emission Immunity Line DIP		Convection cooli Forced air coolin Convection cooli	(*13) (*17) (*17) (*13) (*13) g (*14) g (*14) g (*14) g (*14)		Input - FG : 2.0kVAC Outy More than Approved Approved Designed to meet 1 Designed to Designed to Designed to Designed to	No Poss 5V / 1 -20 - 4 -30 - 4 -30 - 90%RH (N 30 - 90%RH (N 30 - 90%RH (N 30 - 90%RH (N tno operating, 10 - 5 19.6m/s <sup>2</sup> Constant, Less than 196.1m/s <sup>2</sup> Convection Cooling C (10mA) 1xMOPP, Ir put - FG : 1.5kVAC (2 100MQ at 25°C and 5 d by IEC/EN/UL/CSA d by IEC/EN/UL/CSA d by IEC/EN/ES/CSA by IEC/EN/2477-1 Den-an appendix 8 at 0 meet EN55011/EN5 0 meet EN5501 meet EN5501/EN5 0 meet EN5501 meet EN5501 meet EN5501 meet EN	ne ible ible 0.3A $-70^{\circ}C$ $-75^{\circ}C$ o Condensing) o Condensing) 5Hz (Sweep for 1min X,Y,Z 1hour each. (time : $11 \pm 5$ ms) / Forced air cooling put - Output : 4.0kV/ 20mA) 1xMOPP for 1 20%RH Output - FG $-62368-1$ (Altitude $\leq$ $60601-1$ (Altitude $\leq$ $60601-1$ (Altitude $\leq$ $60601-1$ (Altitude $\leq$ 100VAC (creepage dista 5532-B, FCC-Class/ 5532-A, FCC-Class/ 5	AC (10mA) 2xMO min : 500VDC 5,000m) 4,000m) 2,000m) nee and clearance only 3, VCCI-B 4, VCCI-A 3, VCCI-A 3, VCCI-A -5, -6, -8, -11
SOI	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity Storage Humidity Vibration Shock Cooling ATION Withstand Voltage Isolation Resistance NDARD AND COMPLI Safety Conducted Emission Radiated Emission Immunity		Convection cooli Forced air coolin Convection cooli	(*13) (*17) (*17) (*13) (*13) g (*14) g (*14) g (*14) g (*14)		Input - FG : 2.0kVAC Outy More than Approved Approved Designed to meet 1 Designed to Designed to Designed to Designed to	No   -20 - 4   -30 - 4   -30 - 90%RH (N   30 - 90%RH (N   tho operating, 10 - 5   19.6m/s <sup>2</sup> Constant,   Less than 196.1m/s <sup>2</sup> Convection Cooling   C (10mA) 1xMOPP, Ir   put - FG : 1.5kVAC (2   100MΩ at 25°C and 7   d by IEC/EN/LL/CSA   d by IEC/EN/ES/CSA   by IEC/EN/SO concet EN55011/ENS   o meet EN55011/ENS	ne ible ible 0.3A $-70^{\circ}C$ $-75^{\circ}C$ o Condensing) o Condensing) 5Hz (Sweep for 1min X,Y,Z 1hour each. (time : $11 \pm 5$ ms) / Forced air cooling put - Output : 4.0kV/ 20mA) 1xMOPP for 1 20%RH Output - FG $-62368-1$ (Altitude $\leq$ $60601-1$ (Altitude $\leq$ $60601-1$ (Altitude $\leq$ $60601-1$ (Altitude $\leq$ 100VAC (creepage dista 5532-B, FCC-Class/ 5532-A, FCC-Class/ 5	AC (10mA) 2xMC min : 500VDC 5,000m) 4,000m) 2,2000m) nece and clearance only a, VCCI-B A, VCCI-A 3, VCCI-A 4, VCCI-A -5, -6, -8, -11
SOI	Parallel Operation Series Operation Standby Supply IRONMENT Operating Temperature Storage Temperature Operating Humidity Storage Humidity Vibration Shock Cooling ATION Withstand Voltage Isolation Resistance NDARD AND COMPLI Safety Conducted Emission Radiated Emission Immunity Line DIP		Convection cooli Forced air coolin Convection cooli	(*13) (*17) (*17) (*13) (*13) g (*14) g (*14) g (*14) g (*14)		Input - FG : 2.0kVAC Outy More than Approved Approved Designed to meet 1 Designed to Designed to Designed to Designed to	No   -20 - 4   -30 - 4   -30 - 90%RH (N   30 - 90%RH (N   tho operating, 10 - 5   19.6m/s <sup>2</sup> Constant,   Less than 196.1m/s <sup>2</sup> Convection Cooling   C (10mA) 1xMOPP, Ir   put - FG : 1.5kVAC (2   100MΩ at 25°C and 7   d by IEC/EN/LL/CSA   d by IEC/EN/ES/CSA   by IEC/EN/SO concet EN55011/ENS   o meet EN55011/ENS	ne ible $70^{\circ}C$ $75^{\circ}C$ o Condensing) o Condensing) 5Hz (Sweep for 1min X,Y,Z 1hour each. (time : 11 ± 5 ms) / Forced air cooling put - Output : 4.0kV/ 20mA) 1xMOPP for 1 70%RH Output - FG 62368-1 (Altitude $\leq$ 60601-1 (Altitude $\leq$ 60601-1 (Altitude $\leq$ 100VAC (creepage dista 55032-B, FCC-ClassF 55032-A, FCC-ClasSF 55032-B, FCC-ClasSF 550	AC (10mA) 2xMC min : 500VDC 5,000m) 4,000m) 5 2,000m) nece and clearance only 8, VCCI-B 4, VCCI-A 3, VCCI-A 3, VCCI-A -5, -6, -8, -11

### CUS350MP-1000/T

### SPECIFICATIONS (2/2)

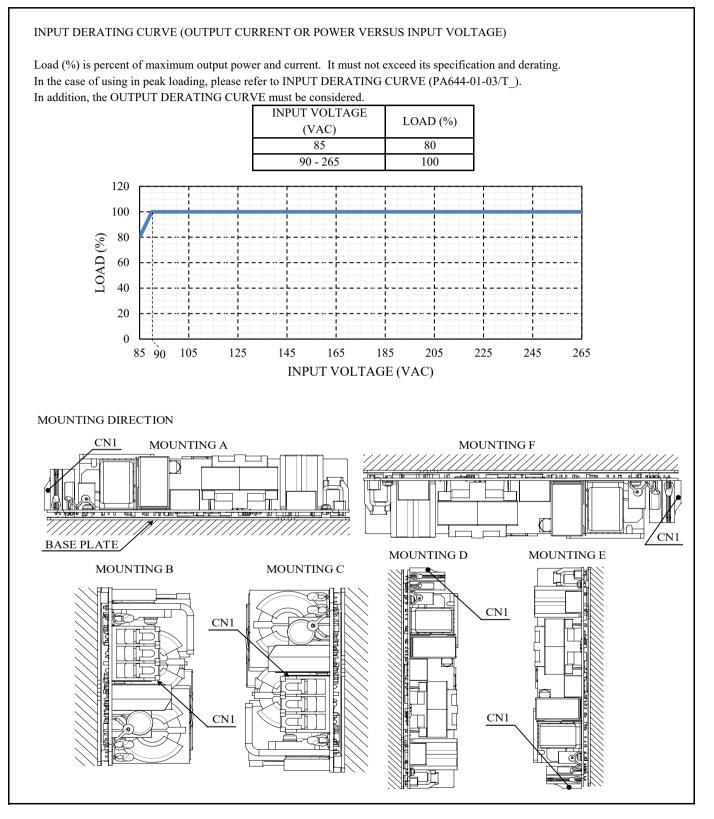
### PA644-01-01/T-A

\*Read instruction manual carefully, before using the power supply unit. =NOTES= \*1. Continuous peak output duration must be less than or equal to 5 sec with duty not more than 45%. Peak output power for more than 5 sec will cause output to shut down and. manual reset of power supply or remote control off/on is required to re-power on. Peak loading is applicable for convection and forced air cooling. When the peak loading condition, output derating is required. For details, refer to peak output condition (PA644-01-03/T). \*2. At Ta=25°C, nominal output voltage, maximum output power at convection cooling and standby supply is at no load. \*3. At Ta=25°C, nominal output voltage, maximum output power at forced air cooling and standby supply is at no load. For details, refer to INPUT DERATING CURVE and OUTPUT DERATING CURVE (PA644-01-02/T). \*4. At Ta=25°C, nominal output voltage, maximum output power at convection cooling and forced air cooling, and standby supply is at no load. \*5. For cases where conformance is required to meet various safety specs (UL, CSA, EN), input voltage range shall be from 100 - 240VAC (50-60Hz). \*6. Not applicable for the in-rush current to Noise Filter for less than 0.2ms. \*7. Refer to Fig. A for measurement of Vo, line and load regulation, and ripple voltage. \*8. Input voltage from 90 to 265VAC at constant output current. \*9. Constant input voltage and output current from no load to maximum output current. \*10. Constant current mode protection with automatic recovery. Over current condition for more than 1 sec will cause output to shut down. Avoid to operate at over load or short circuit condition. \*11. Inverter shut down method. When OVP is triggered, output will be shut down, and manual reset of power supply or remote control off/on is required to re-power on. \*12. Apply the appropriate measurement method according to the required standard: UL, CSA, EN and DENAN (at 60Hz), Ta=25°C. \*13. For details, Refer to OUTPUT DERATING CURVE (PA644-01-02/T). \*14. The result is evaluated by TDK-Lambda standard measurement condition. The power supply is considered as a component installed to an equipment. The equipment should be re-evaluated to meet its EMC directives. \*15. When the input voltage is less than 90VAC, output derating is required. Refer to INPUT DERATING CURVE (PA644-01-02/T). \*16. Refer to instruction manual (PA644-04-01). \*17. Using 4 mounting holes on baseplate. The result is evaluated by TDK-Lambda standard measurement condition. The equipment should be re-evaluated to meet its vibration and shock requirement. \*18. Output voltage setting at the time of shipment. At 100VAC, nominal output voltage and maximum output current. Fig. A Measuring Point for Ripple and Noise Measure by JEITA probe 150mm Bandwidth of Oscilloscope : 100MHz +VА C1  $C^{2}TT$ Load -V C1 : Cap., Film 0.1µF Measuring Point for C2 : Cap., Elect 100µF Vo, Line and Load Regulation

### CUS350MP-1000/T

### INPUT DERATING and OUTPUT DERATING (1/3)

### PA644-01-02/T



### C<u>US350MP-1000/</u>T

### INPUT DERATING and OUTPUT DERATING (2/3)

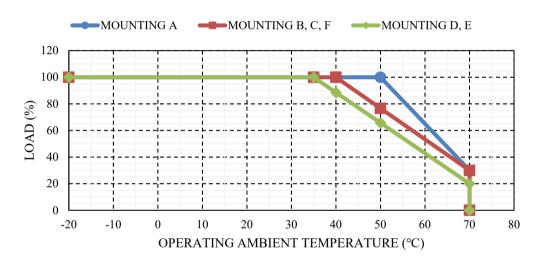
### PA644-01-02/T

OUTPUT DERATING CURVE (OUTPUT CURRENT OR POWER VERSUS OPERATING AMBIENT TEMPERATURE)

### 1. CONVECTION COOLING

Load (%) is percent of maximum output power and current. It must not exceed its specification and derating. The OUTPUT DERATING CURVE also must be considered at peak loading.

Ta (°C)	LOAD (%)					
1a(C)	MOUNTING A	MOUNTING B, C, F	MOUNTING D, E			
-20 - +20	100	100	100			
35	100	100	100			
40	100	100	88			
50	100	76	65			
70	30	30	20			



### C<u>US350MP-1000/</u>T

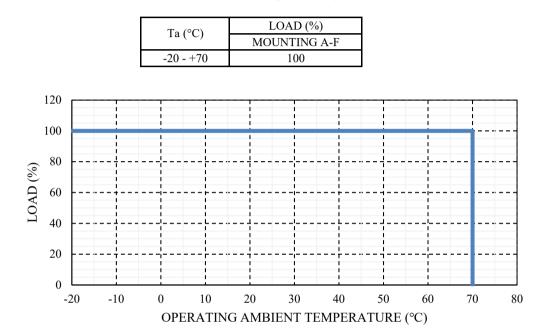
### INPUT DERATING and OUTPUT DERATING (3/3)

### PA644-01-02/T

OUTPUT DERATING CURVE (OUTPUT CURRENT OR POWER VERSUS OPERATING AMBIENT TEMPERATURE)

### 2. FORCED AIR COOLING

Load (%) is percent of maximum output power and current. It must not exceed its specification and derating. The OUTPUT DERATING CURVE also must be considered at peak loading.



Forced air cooling requires air velocity of more than 2.2m/s and air flow must be towards to C8, C9 and T1. The components must be cooled by forced air.

The power supply is considered as a component installed, to an equipment.

The equipment should be re-evaluated and make sure to meet allowable component temperature.

For allowable component temperature and further detail, refer to instruction manual (PA644-04-01\_).

### CUS350MP-1000/T

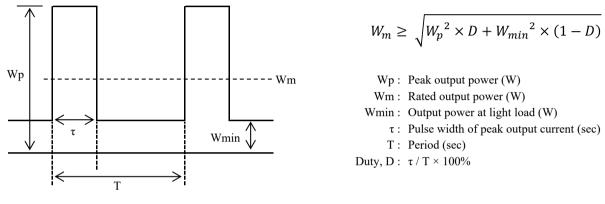
### PEAK OUTPUT CONDITION (1/2)

### PA644-01-03/T

#### PEAK OUTPUT CONDITION

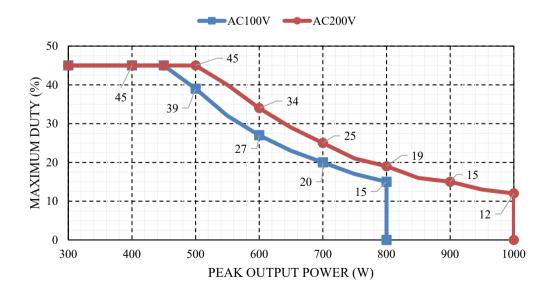
Use this product to achieve its peak output power capability according to the following expression: When the peak output power is more than 800W, pulse width of peak power ( $\tau$ ) must be less than or equal to 1 sec. When input voltage is less than 170VAC, output derating is required. Refer input derating curve.

Peak output codition must be considered as per following expression, input derating curve and output derating curve.



#### PEAK OUTPUT POWER VERSUS PEAK PULSE WIDTH

INPUT VOLTAGE	PEAK OUTPUT POWER	PEAK PULSE WIDTH
Vin (VAC)	Wp (W)	$\tau$ (sec)
$85 \le Vin \le 265$	800	5
$170 \le \text{Vin} \le 265$	1000	1



### CUS350MP-1000/T

### PEAK OUTPUT CONDITION (2/2)

### PA644-01-03/T

