

10A05 THRU 10A10

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10A05 THRU 10A10

10.0A Axial Leaded General Purpose Rectifiers - 50V-1000V

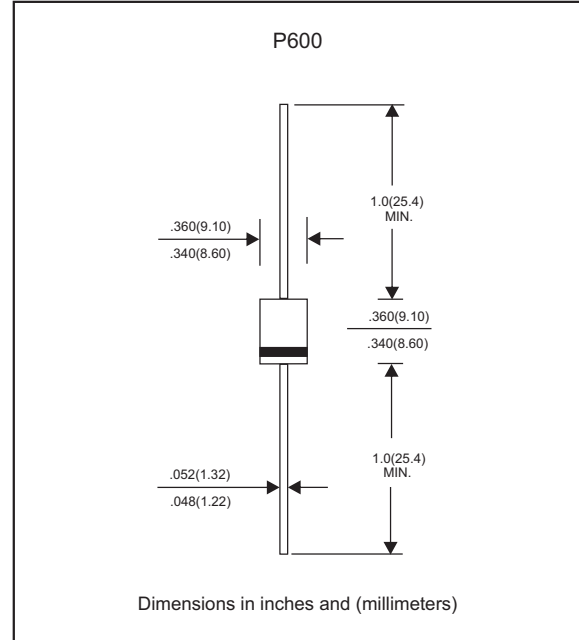
Features

- Low forward voltage drop.
- High current capability.
- High surge current capability.
- High reliability.
- Silicon rubber coating chip junction.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228
- Suffix "-H" indicates Halogen-free parts, ex. 10A05-H.

Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : Molded plastic, P600
- Lead : Axial leads, solderable per MIL-STD-202, Method 208 guranteed
- Polarity: Color band denotes cathode end
- Mounting Position : Any
- Weight : Approximated 1.75 gram

Package outline



Maximum ratings and Electrical Characteristics (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	See Fig.1	I_o			10.0	A
Forward surge current	8.3ms single half sine-wave (JEDEC methode)	I_{FSM}			400	A
Reverse current	$V_R = V_{RRM} \quad T_J = 25^{\circ}\text{C}$	I_R			10	uA
	$V_R = V_{RRM} \quad T_J = 100^{\circ}\text{C}$				400	
Thermal resistance	Junction to Ambient .375" (9.5mm) lead length	$R_{\theta JA}$		10		$^{\circ}\text{C}/\text{W}$
Diode junction capacitance	f=1MHz and applied 4V DC reverse voltage	C_J		150		pF
Storage temperature		T_{STG}	-65		+150	$^{\circ}\text{C}$

SYMBOLS	V_{RRM}^{*1} (V)	V_{RMS}^{*2} (V)	V_R^{*3} (V)	V_F^{*4} (V)	Operating temperature $T_J, (^{\circ}\text{C})$
10A05	50	35	50	1.00	-55 to +125
10A1	100	70	100		
10A2	200	140	200		
10A4	400	280	400		
10A6	600	420	600		
10A8	800	560	800		
10A10	1000	700	1000		

*1 Repetitive peak reverse voltage

*2 RMS voltage

*3 Continuous reverse voltage

*4 Maximum forward voltage@ $I_F=10.0\text{A}$

Rating and characteristic curves (10A05 THRU 10A10)

Fig.1 - Forward Current Derating Curve

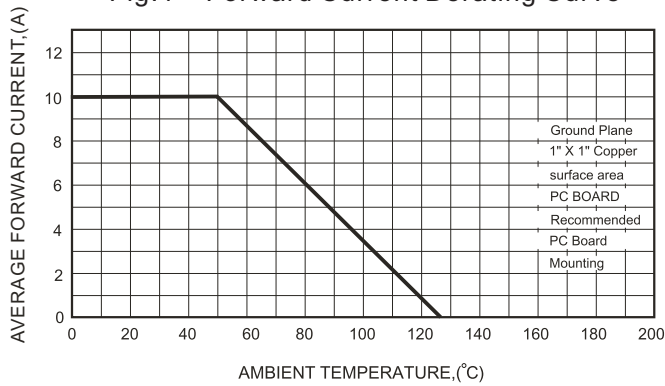


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

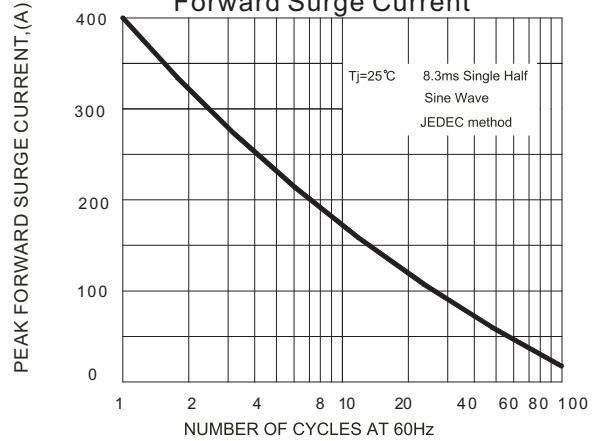


Fig. 3 - Typical Instantaneous Forward Characteristics

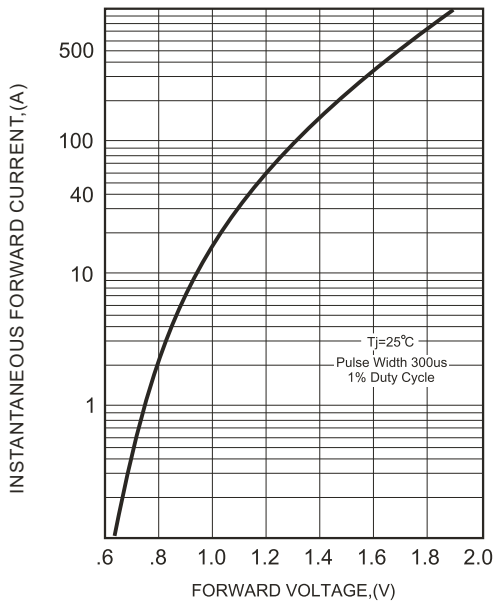
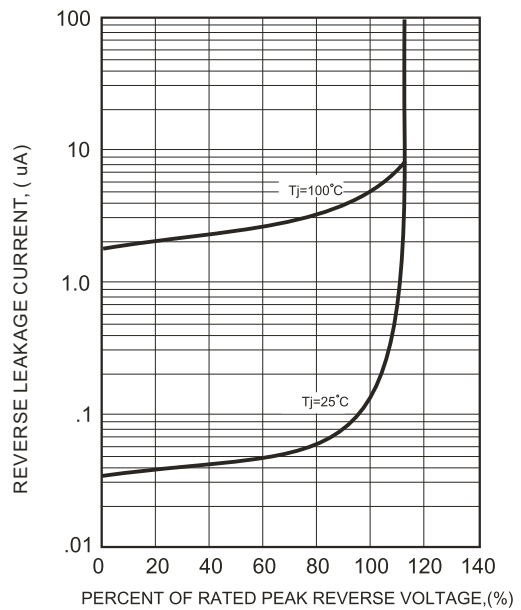




Fig. 4 - Typical Reverse Characteristics



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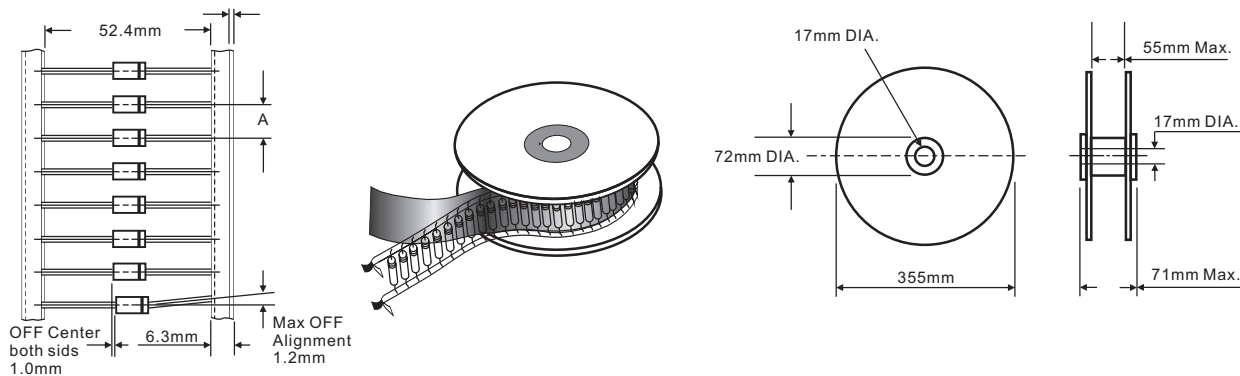
Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code
10A05	10A05
10A1	10A1
10A2	10A2
10A4	10A4
10A6	10A6
10A8	10A8
10A10	10A10

Taping & bulk specifications for AXIAL devices



REEL PACKING

DEVICE CASE TYPE	Q'TY 1 (PCS / REEL)	COMPONENT SPACING "A" in FIG. A	CARTON SIZE (m/m)	Q'TY 2 (PCS / CARTON)	APPROX. CROSS WEIGHT(kg)
P600	1,000	5 mm	360 * 340 * 370	4,000	9.5

AMMO PACKING

DEVICE CASE TYPE	Q'TY 1 (PCS / BOX)	INNER BOX SIZE (m/m)	CARTON SIZE (m/m)	Q'TY 2 (PCS / CARTON)	APPROX. CROSS WEIGHT(kg)
P600	500	260 * 83 * 160	440 * 270 * 340	5,000	12.0

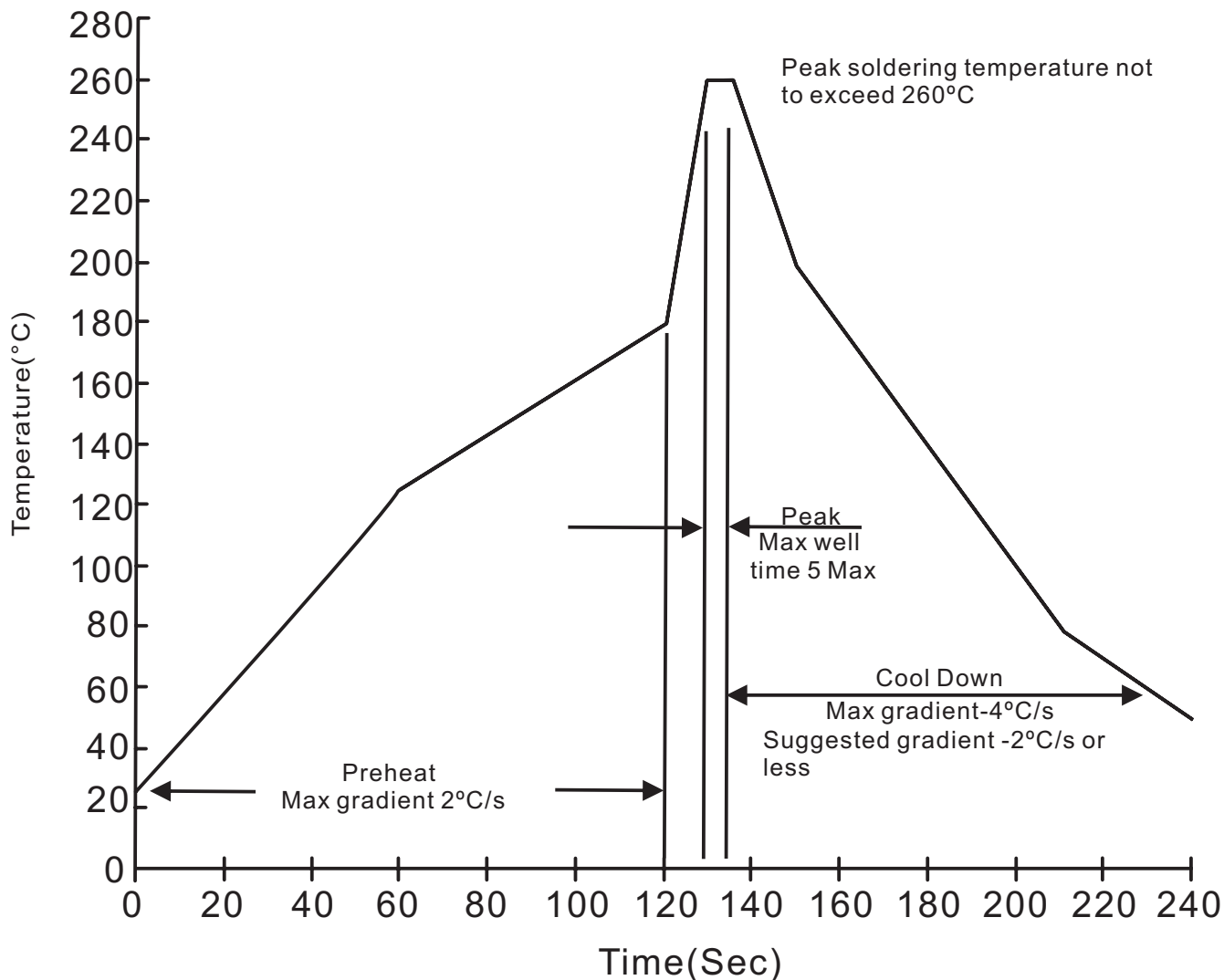
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BULK PACKING

DEVICE CASE TYPE	Q'TY 1 (PCS / BOX)	INNER BOX SIZE (m/m)	CARTON SIZE (m/m)	Q'TY 2 (PCS / CARTON)	APPROX. CROSS WEIGHT(kg)
P600	250	305 * 73 * 40	347 * 320 * 271	6,000	14.5

Suggested thermal profiles for soldering processes

1. Lead free temperature profile wave-soldering



10A05 THRU 10A10**High reliability test capabilities**

Item Test	Conditions	Reference
1. Solder Resistance	at 260±5°C for 10±2sec. immerse body into solder 1/16"±1/32"	MIL-STD-750D METHOD-2031
2. Solderability	at 245±5°C for 5 sec.	MIL-STD-202F METHOD-208
3. Pull Test	2.0kg in axial lead direction for 10 sec. $I_F = I_O$	MIL-STD-202F METHOD-211A
4. Bend Lead	2.0kg weight applied to each lead bending arc 90°±5° for 3 times	MIL-STD-202F METHOD-211A
5. High Temperature Reverse Bias	$V_R = 80\%$ rate at $T_J = 125^\circ\text{C}$ for 168 hrs.	MIL-STD-750D METHOD-1038
6. Forward Operation Life	Rated average rectifier current at $T_A = 25^\circ\text{C}$ for 500hrs. $T_A = 25^\circ\text{C}$, $I_F = I_O$	MIL-STD-750D METHOD-1027
7. Intermittent Operation Life	On state: power on for 5 min. off state: power off for 5 min, on and off for 500 cycles.	MIL-STD-750D METHOD-1036
8. Pressure Cooker	15P _{sig} at $T_A = 121^\circ\text{C}$ for 4 hrs.	JESD22-A102
9. Temperature Cycling	-55°C to +125°C dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
10. Forward Surge	8.3ms single half sine-wave one surge.	MIL-STD-750D METHOD-4066-2
11. Humidity	at $T_A = 85^\circ\text{C}$, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
12. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031