

6A05 THRU 6A10

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6A05 THRU 6A10

6.0A Leaded Type General Purpose Rectifiers - 50V-1000V

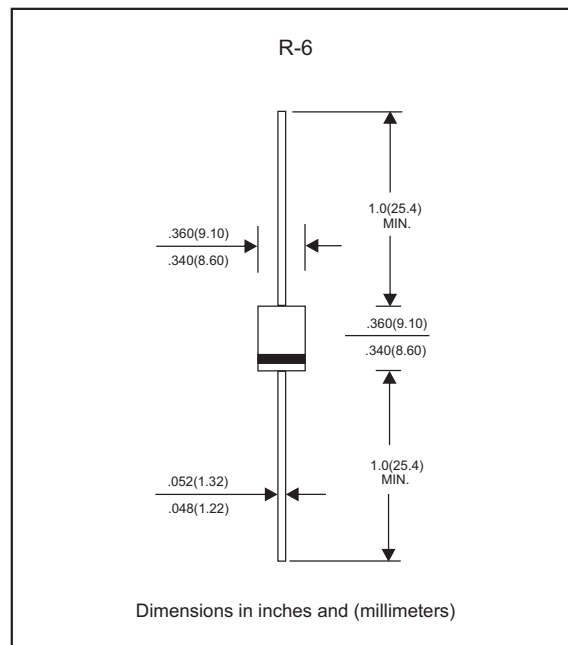
Features

- Axial lead type devices for through hole design.
- High current capability.
- High surge capability.
- Open junction junction chip inside.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228
- Suffix "-H" indicates Halogen-free parts, ex. 6A05-H.

Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : Molded plastic, R-6
- Lead : Axial leads, solderable per MIL-STD-202, Method 208 guaranteed
- Polarity: Color band denotes cathode end
- Mounting Position : Any
- Weight : Approximated 1.75 gram

Package outline



Maximum ratings (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			6.0	A
Forward surge current	8.3ms single half sine-wave superimposed on rate load (JEDEC methode)	I_{FSM}			250	A
Reverse current	$V_R = V_{RRM} \quad T_J = 25^{\circ}\text{C}$	I_R			10	μA
	$V_R = V_{RRM} \quad T_J = 100^{\circ}\text{C}$				100	
Thermal resistance	Junction to ambient	$R_{\theta JA}$		10		$^{\circ}\text{C/W}$
Diode junction capacitance	$f=1\text{MHz}$ and applied 4V DC reverse voltage	C_J		100		pF
Storage temperature		T_{STG}	-65		+175	$^{\circ}\text{C}$

SYMBOLS	V_{RRM}^{*1} (V)	V_{RMS}^{*2} (V)	V_R^{*3} (V)	V_F^{*4} (V)	Operating temperature $T_J, (^{\circ}\text{C})$
6A05	50	35	50	1.00	-55 to +125
6A1	100	70	100		
6A2	200	140	200		
6A4	400	280	400		
6A6	600	420	600		
6A8	800	560	800		
6A10	1000	700	1000		

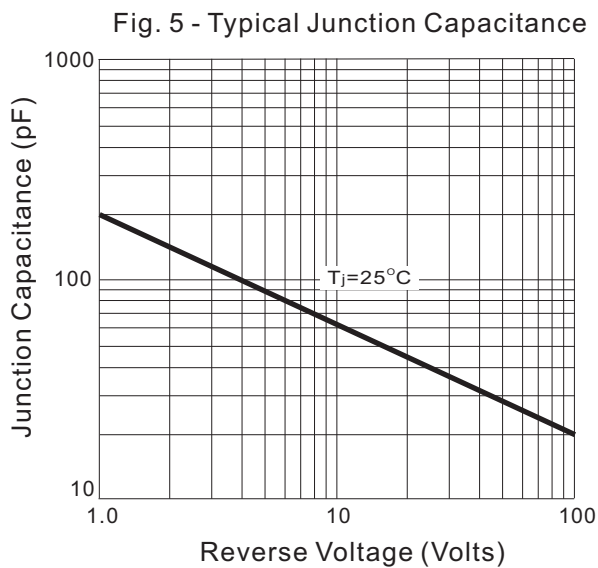
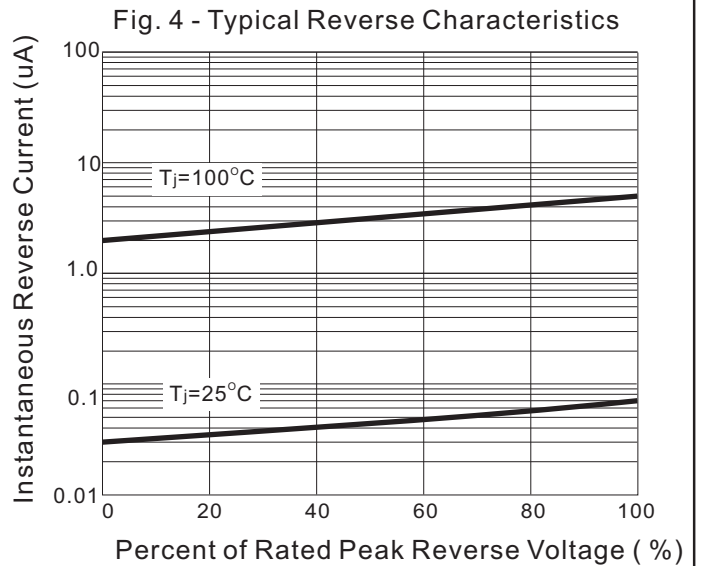
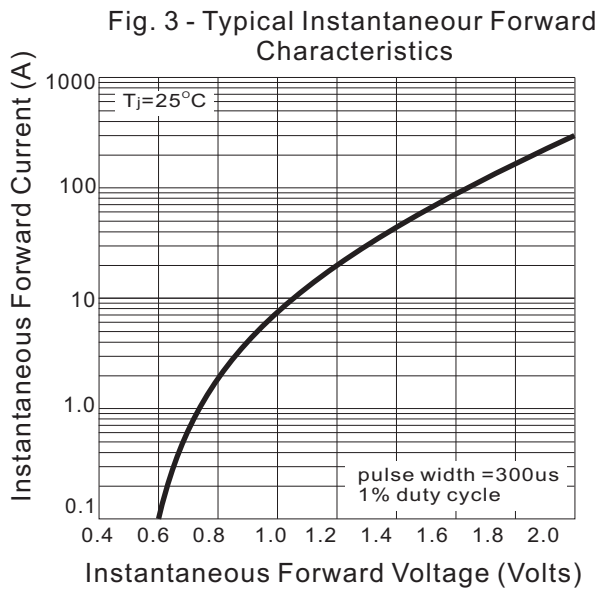
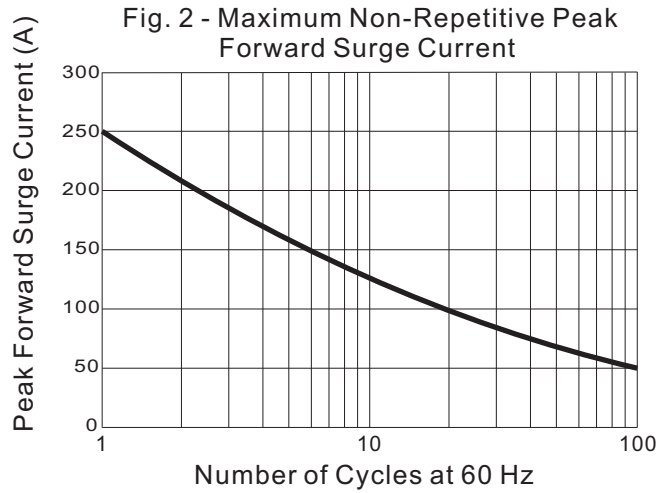
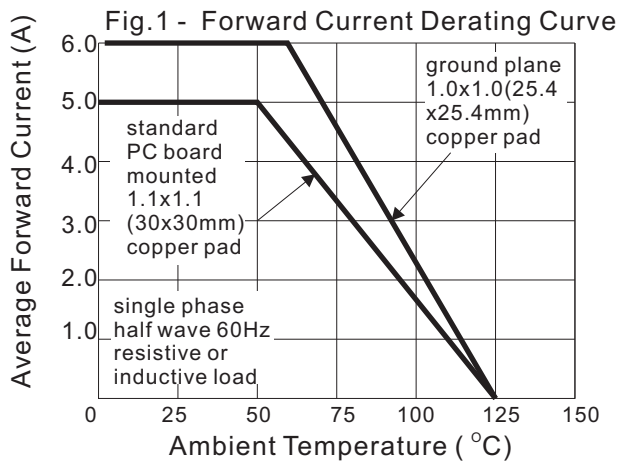
*1 Repetitive peak reverse voltage

*2 RMS voltage

*3 Continuous reverse voltage



*4 Maximum forward voltage@ $I_F=6.0\text{A}$

Rating and characteristic curves (6A05 THRU 6A10)



6A05 THRU 6A10

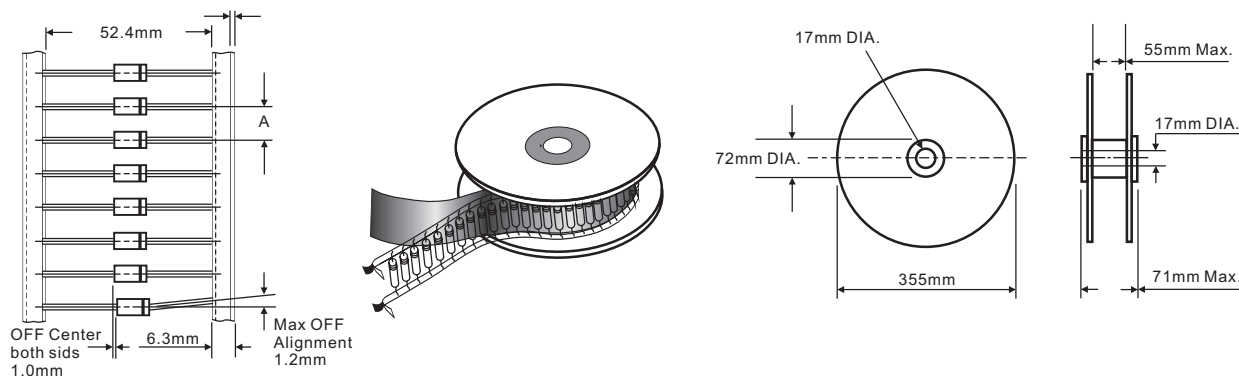
Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode	1  2	1  2

Marking

Type number	Marking code
6A05	6A05
6A1	6A1
6A2	6A2
6A4	6A4
6A6	6A6
6A8	6A8
6A10	6A10

Taping & bulk specifications for AXIAL devices



REEL PACKING

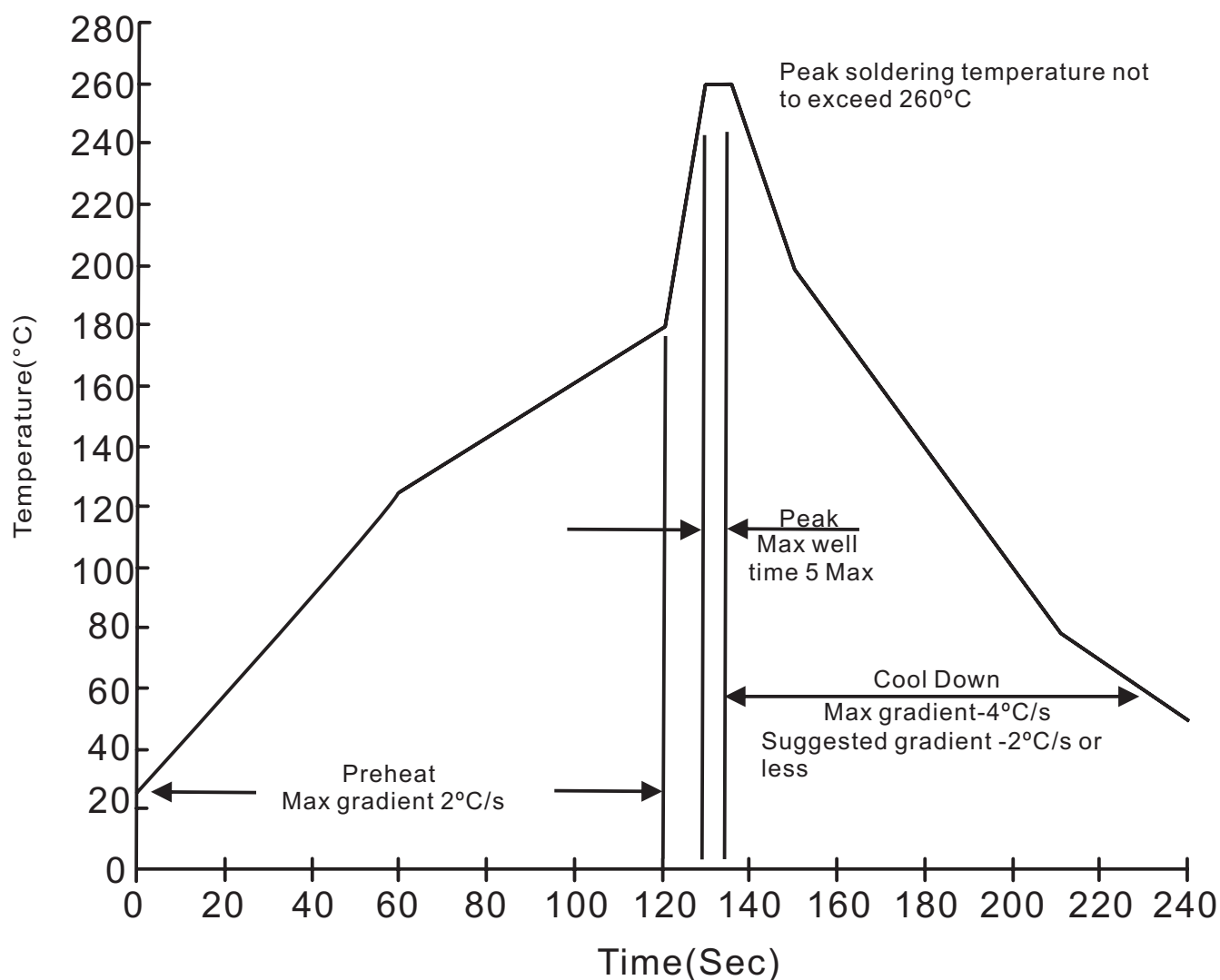
DEVICE CASE TYPE	Q'TY 1 (PCS / REEL)	COMPONENT SPACING "A" in FIG. A	CARTON SIZE (m/m)	Q'TY 2 (PCS / CARTON)	APPROX. CROSS WEIGHT(kg)
R-6	1,000	5 mm	360 * 340 * 370	4,000	9.5

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)
R-6	500	260 * 83 * 160	440 * 270 * 340	5,000	12.0

6A05 THRU 6A10**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)
R-6	250	305 * 73 * 40	347 * 320 * 271	6,000	14.5

Suggested thermal profiles for soldering processes**1. Lead free temperature profile wave-soldering**

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High reliability test capabilities

Item Test	Conditions	Reference
1. Solder Resistance	at $260 \pm 5^\circ\text{C}$ for 10 ± 2 sec. immerse body into solder $1/16" \pm 1/32"$	MIL-STD-750D METHOD-2031
2. Solderability	at $245 \pm 5^\circ\text{C}$ 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 $90^\circ \pm 5^\circ$ 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-1026
6. Forward Operation Life	Rated average rectifier current at $T_A = 25^\circ\text{C}$ for 500hrs.	MIL-STD-750D METHOD-1027
7. Intermittent Operation Life	$T_A = 25^\circ\text{C}$, $I_F = I_O$ 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 $+125^\circ\text{C}$ dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
10. Thermal Shock	0°C for 5 min. rise to 100°C for 5 min. total 10 cycles.	MIL-STD-750D METHOD-1056
11. Forward Surge	8.3ms single half sine-wave superimposed on rated load, one surge.	MIL-STD-750D METHOD-4066-2
12. Humidity	at $T_A = 85^\circ\text{C}$, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1038
13. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031
14. Solvent Resistance	Dip into Freon at 25°C for 1 min.	MIL-STD-202F METHOD-215