

6.0A Leaded Type Fast Recovery Rectifiers-50V-1000V

Features

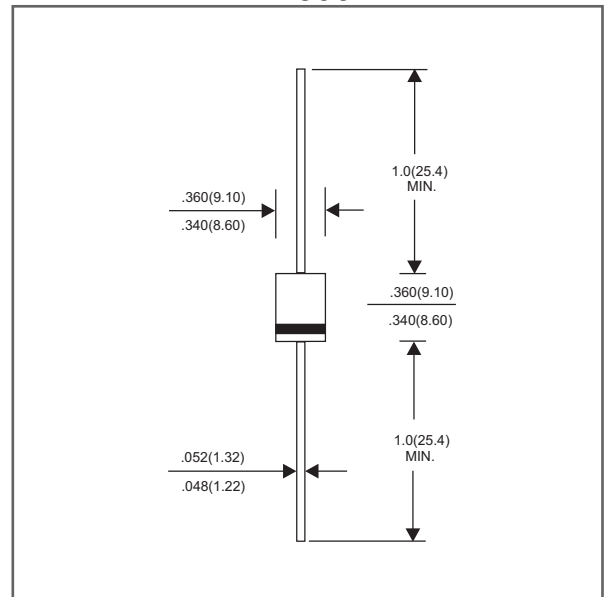
- Axial lead type devices for through hole design.
- High current capability.
- Fast switching for high efficiency.
- High surge capability.
- Open junction chip insid.
- Lead-free parts meet RoHS requirements.
- Suffix "-H" indicates Halogen-free parts, ex. FR601G-H.

Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : Molded plastic, P600
- Lead : Axial leads, solderable per MIL-STD-202, Method 208 guaranteed
- Polarity: Color band denotes cathode end
- Mounting Position : Any
- Weight : Approximated 2.1 gram

Package outline

P600



Dimensions in inches and (millimeters)

Maximum ratings (AT $T = 25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	See Fig.2	I_o			6.0	A
Forward surge current	8.3ms single half sine-wave superimposed on rate load (JEDEC methode)	I_{FSM}			300	A
Reverse current	$V_R = V_{RRM} \quad T_J = 25^{\circ}\text{C}$	I_R			5.0	μA
	$V_R = V_{RRM} \quad T_J = 100^{\circ}\text{C}$				150	
Diode junction capacitance	f=1MHz 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)	T _{RR} ^{*5} (nS)	Operating temperature T _J , (°C)
FR601G	50	35	50	1.30	150	-55 to +125
FR602G	100	70	100			
FR603G	200	140	200			
FR604G	400	280	400		250	
FR605G	600	420	600			
FR606G	800	560	800			
FR607G	1000	700	1000	500		

*1 Repetitive peak reverse voltage

*2 RMS voltage

*3 Continuous reverse voltage

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

*5 Maximum Reverse recovery time, note 1

Note 1. Reverse recovery time test condition, $I_F=0.5\text{A}$, $I_R=1.0\text{A}$, $I_{RR}=0.25\text{A}$

Rating and characteristic curves

Fig. 1 - Forward Current Derating Curve

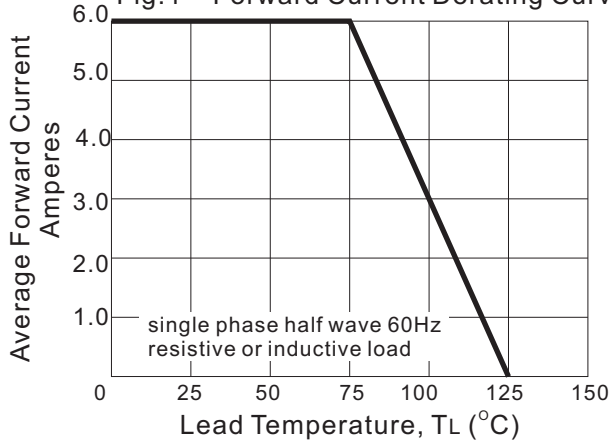


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

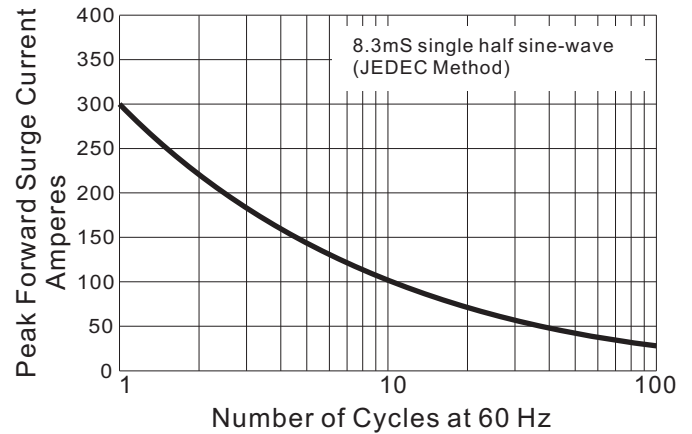


Fig. 3 - Typical Instantaneous Forward Characteristics

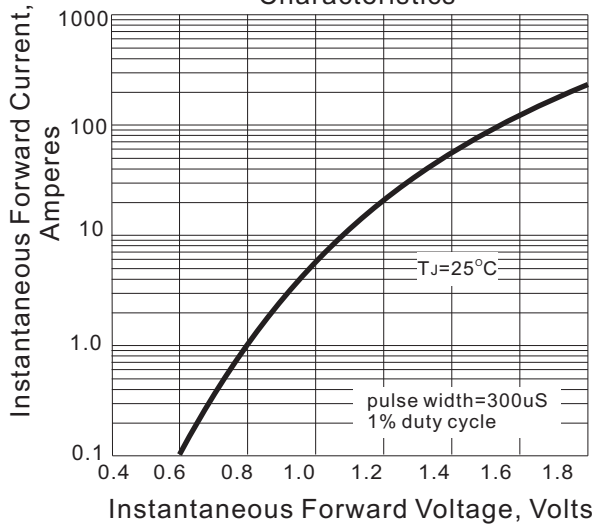


Fig. 4 - Typical Instantaneous Reverse Characteristics

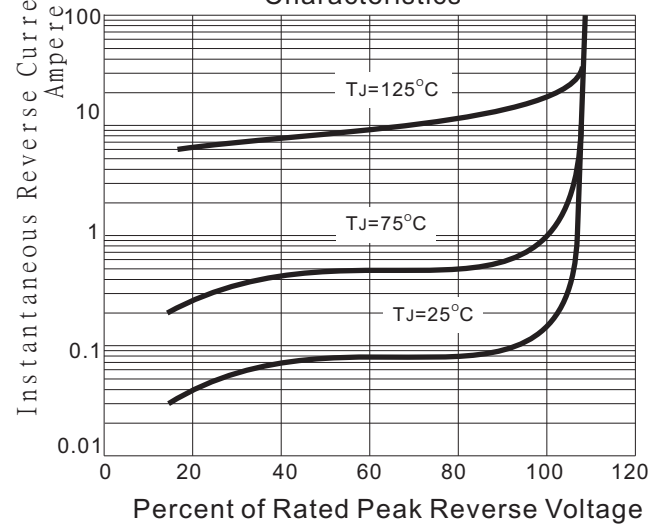


Fig. 5 - Typical Junction Capacitance

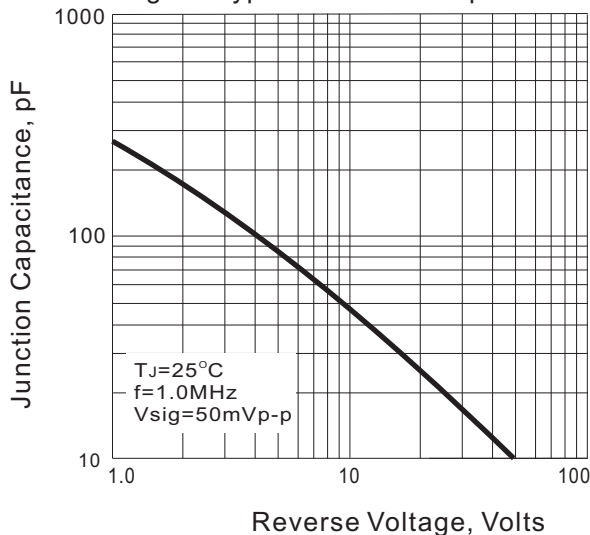
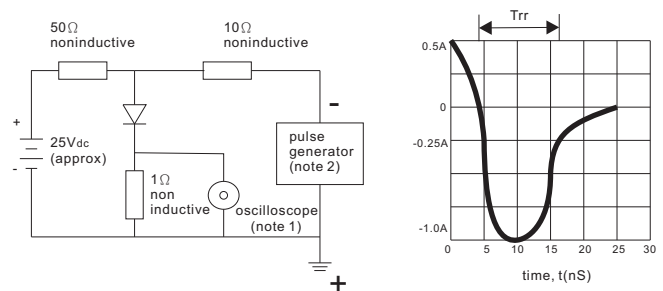


Fig. 6 - Test Circuit Diagram and Reverse Recovery Time Characteristic



Note: 1. rise time=7nS Max. input impedance=1M Ω , 22pF
2. rise time=10nS Max. source impedance=80 Ω