

Fast Recovery Rectifiers

Reverse Voltage: 100 to 1000 Volts

Forward Current: 16.0 Ampere

RoHS Device

Halogen Free

Features

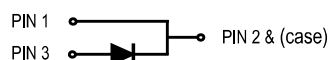
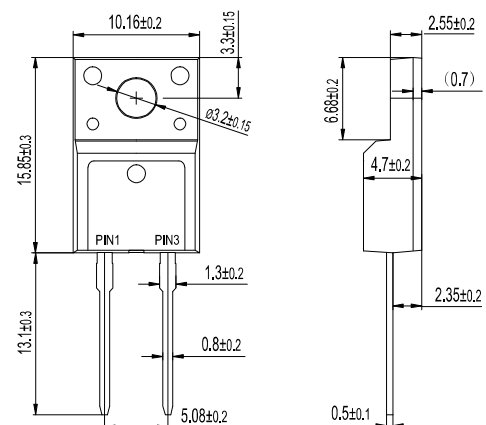
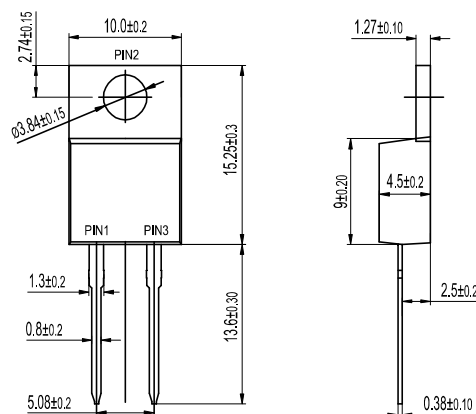
- Glass passivated chip junctions
- Low reverse current operation
- High Junction Temperature
- Fast recovery time for switching
- High Forward Surge Capability
- Lead free in compliance with EU RoHS 2011/65/EU directive

Mechanical data

- Circuit figure: Single positive
- Leads: Solderable per mil-std-202, Method 208
- Polarity: as marked
- Mounting torque: 5 in-lbs maximum
- Terminals: Puretin plated
- Weight: TO-220AC 1.80 grams
ITO-220AC 1.65 grams

Package outline

Dimensions in millimeters



Company reserves the right to improve product design, functions and reliability without notice.

Rev:1.0

Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz resistive or inductive load, for capacitive load, derate by 20%

Parameter	Symbol	FR 1601 1601F	FR 1602 1602F	FR 1604 1604F	FR 1606 1606F	FR 1608 1608F	FR 1610 1610F	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	100	200	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	70	140	280	420	560	700	V
Maximum DC blocking voltage	V_{DC}	100	200	400	600	800	1000	V
Maximum average forward rectified current	I_{AV}	16						A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	200						A
Typical thermal resistance per diode (Note 1) TO-220AC ITO-220AC	$R_{\theta JC}$	2.5 4.0						°C/W
Operating junction temperature range	T_J	-55 ~ +150						°C
Storage temperature range	T_{stg}	-55 ~ +150						°C
Characteristics	Symbol	FR 1601 1601F	FR 1602 1602F	FR 1604 1604F	FR 1606 1606F	FR 1608 1608F	FR 1610 1610F	Unit
Maximum instantaneous forward voltage at specified current	V_F	1.3						V
Maximum DC reverse current at rated DC blocking voltage $T_a = 25^\circ\text{C}$ $T_a = 125^\circ\text{C}$	I_R	10 250						μA
Maximum reverse recovery time (Note 2)	t_{rr}	150			250	500		ns

Notes: 1. Thermal resistance from junction to case.

2. Test conditions: $I_F=0.5\text{A}$, $I_R=1.0\text{A}$, $I_{RR}=0.25\text{A}$.

Rating and Characteristic Curves

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

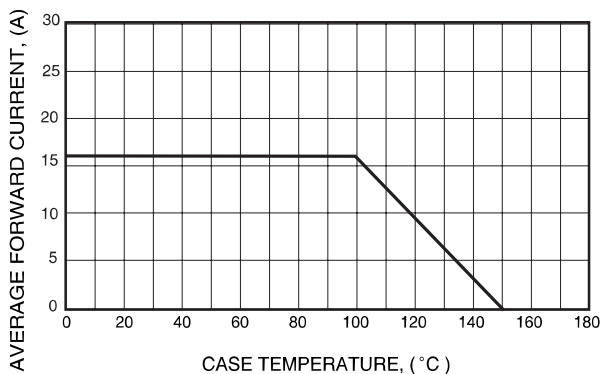


FIG. 3 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

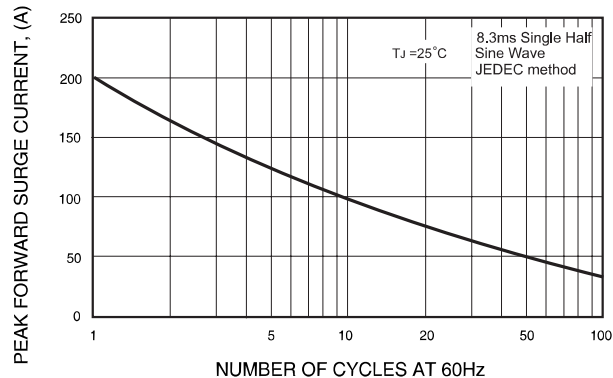


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

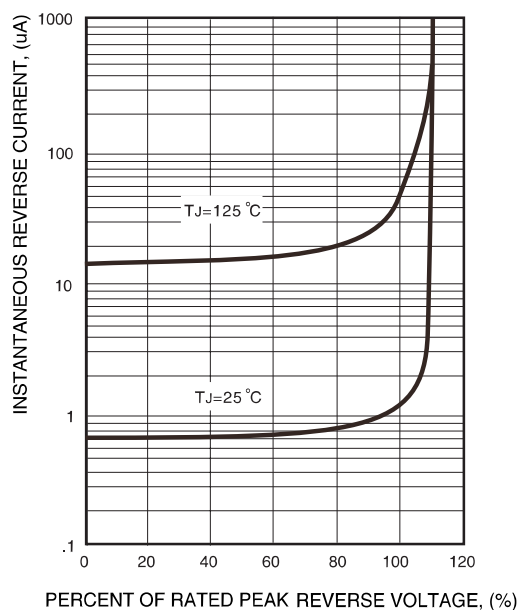


FIG. 2 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

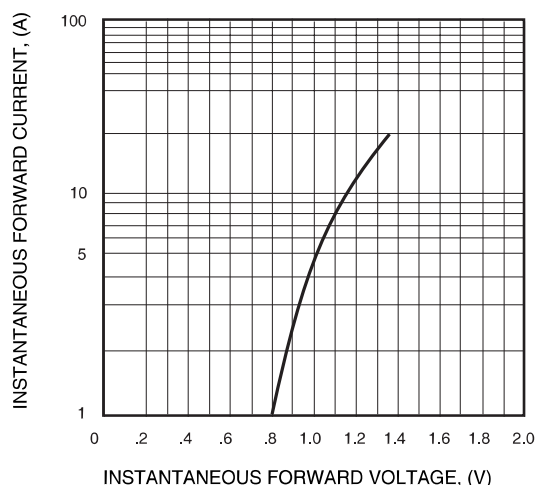
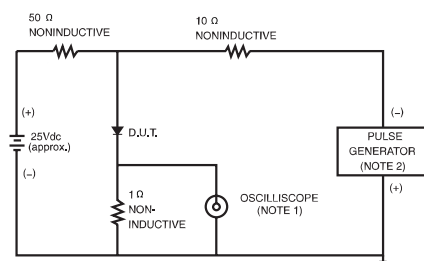
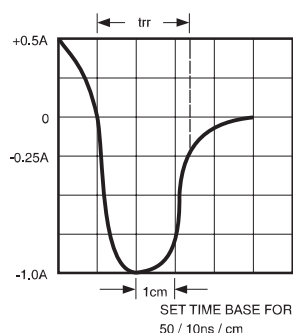


FIG.6- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS

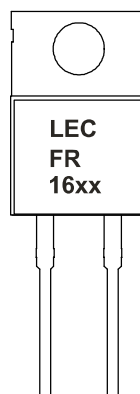


NOTES: 1. Rise Time= 7ns max., Input Impedance= 1 megohm.22pF.
2. Rise Time= 10ns max., Source Impedance= 50 ohms.



Standard Packaging

Case Type	TUBE PACK	
	TUBE (pcs)	BOX (pcs)
TO-220AC	50	1,000



Standard Packaging

Case Type	TUBE PACK	
	TUBE (pcs)	BOX (pcs)
ITO-220AC	50	1,000

