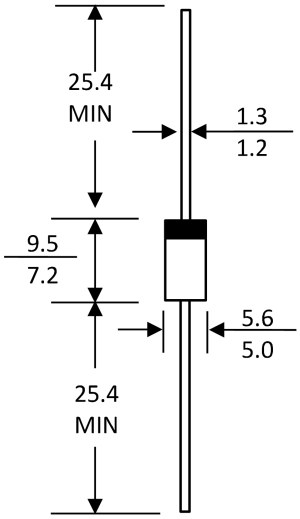
FR301–FR307

Fast Recovery Rectifiers

Features

- Plastic package has Underwriters Laboratory Classification 94V-0
- Fast switching for high efficiency
- Low reverse leakage
- High forward surge current capability
- High temperature soldering guaranteed: 250℃/10 seconds, 0.375”(9.5mm) lead length 5lbs. (2.3kg) tension

DO-27



unit： mm

Mechanical data

- Case: JEDEC DO-27 Molded plastic body
- Terminals: plated axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Mounting Position: Any

Maximum Ratings and Electrical Characteristics

Ratings at 25℃ ambient temperature unless otherwise specified

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

Parameter	Symbols	FR301	FR302	FR303	FR304	FR305	FR306	FR307	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	V
Maximum average forward current .375”(9.5mm) Lead length at T_A=75℃	$I_{F(AV)}$	3.0							A
Peak forward surge current 8.3 ms single hafl sine-wave superimposed on rated load(JEDEC method)	I_{FSM}	150.0							A
Maximum instantaneous Forward Voltage at 3.0A	V_F	1.3							V
Maximum DC Reverse Current T_A=25℃ At Rated DC Blocking Voltage T_A=100℃	I_R	5.0 100.0							uA
Maximum Reverse Recovery Time (Note 1)	Trr	150				250	500		ns
Typical Junction capacitance (Note 2)	C_J	60.0							pF
Typical r Thermal Resistance (Note 3)	$R_{\theta JA}$	40.0							℃/W
Operating junction and storage temperature range	T_J ,T_{STG}	-65 to +150							℃

Note: 1. Reverse recovery condition IF=0.5A, IR=1.0A, IRR=0.25A

2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.

3. Thermal resistance from junction to ambient at 0.375” (9.5mm) lead length, P.C.B. mounted

Ratings and Characteristic Curves

(TA=25℃ unless otherwise noted)

FIG. 1- FORWARD CURRENT DERATING CURVE

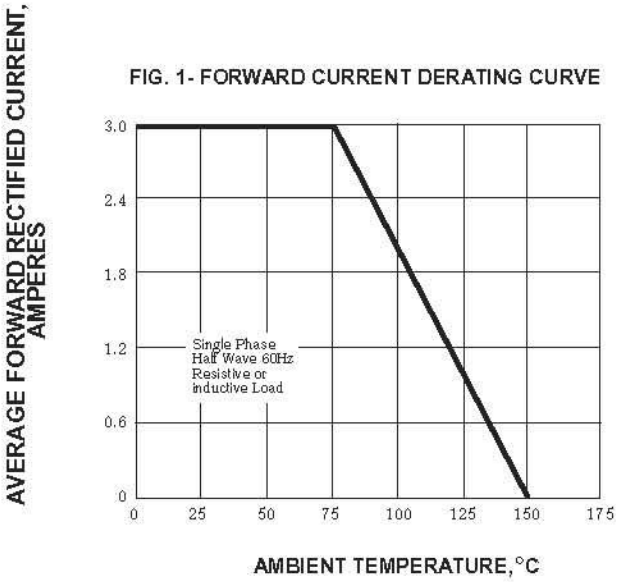


FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

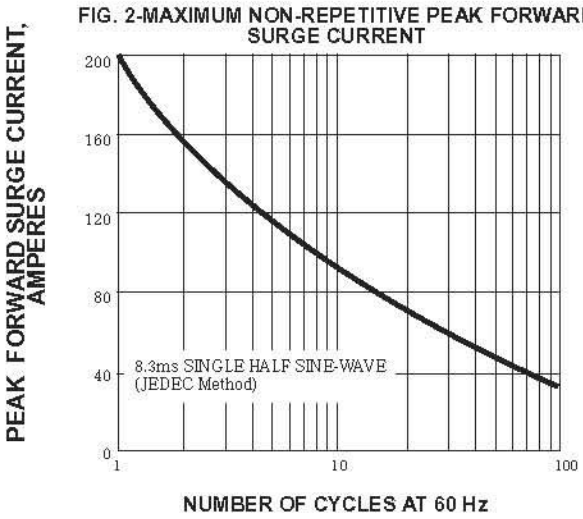


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

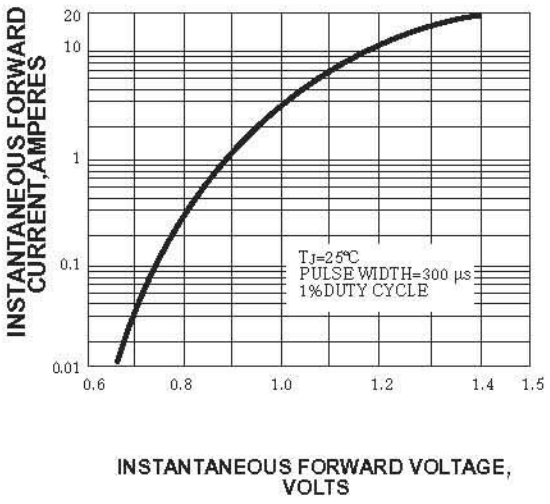


FIG. 4-TYPICAL REVERSE CHARACTERISTICS

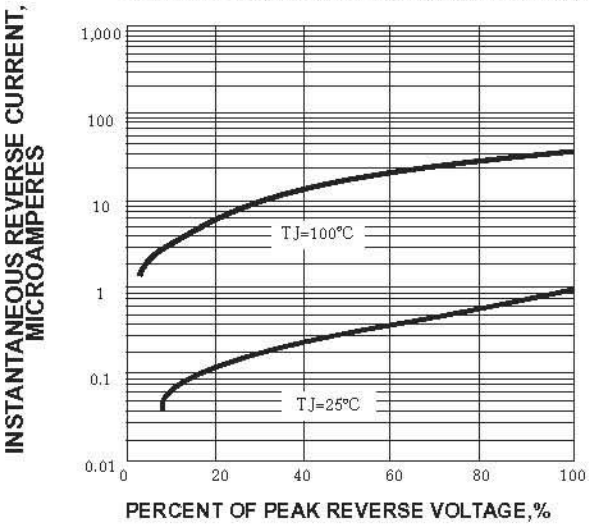


FIG. 5-TYPICAL JUNCTION CAPACITANCE

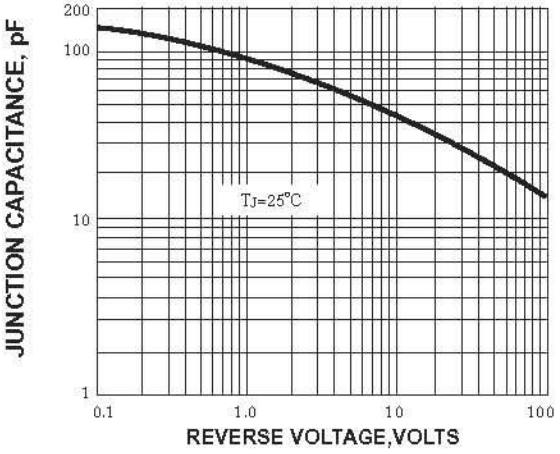


FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE