

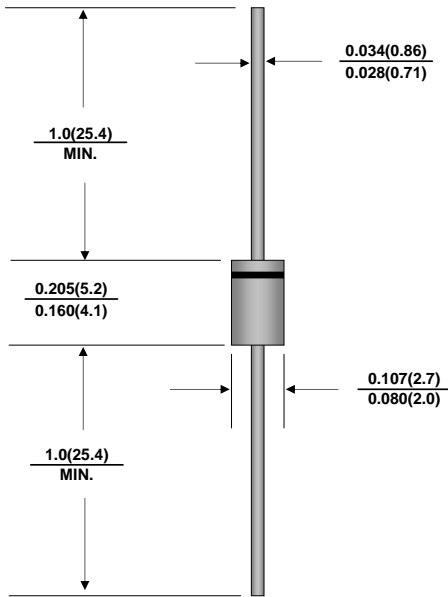


FR151S THRU FR157S

HIGH EFFICIENCY RECTIFIERS

Reverse Voltage - 50 to 1000 Volts Forward Current - 1.5 Ampere

DO-41



Dimensions in inches and (millimeters)

FEATURES

- ◆ Low power loss, high efficiency
- ◆ Low leakage
- ◆ Low forward voltage drop
- ◆ High current capability
- ◆ High speed switching
- ◆ High current surge capability
- ◆ High reliability
- ◆ Pb free product : 99% Sn above can meet RoHS environment substance directive request

MECHANICAL DATA

Case: JEDEC DO-41, Molded plastic

Terminals: Solderable per MIL-STD-750 Method 2026

Epoxy: UL94V-0 rate flame retardant

Approx. Weight: 0.014 ounce, 0.40 gram

Mounting Position: Any

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 current derate by 20%.

PARAMETER	SYMBOLS	FR 151S	FR 152S	FR 153S	FR 154S	FR 155S	FR 156S	FR 157S	UNITS
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	Volts
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	Volts
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	Volts
Average Rectified current at $T_A = 75^\circ\text{C}$	$I_{(AV)}$	1.5							Amp
Non-repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	50							Amps
Maximum Forward Voltage at $I_F = 1.5\text{A}$	V_F	1.3							Volts
Maximum DC reverse current at rated DC blocking voltage at $T_A = 25^\circ\text{C}$	I_R	5.0							μA
Maximum reverse recovery time (NOTE 1)	t_{rr}	150				250	500		nS
Typical Junction Capacitance (NOTE 2)	C_J	15							pF
Operating Junction & Storage Temperature Range	T_J, T_{STG}	-55 to +150							$^\circ\text{C}$

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

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

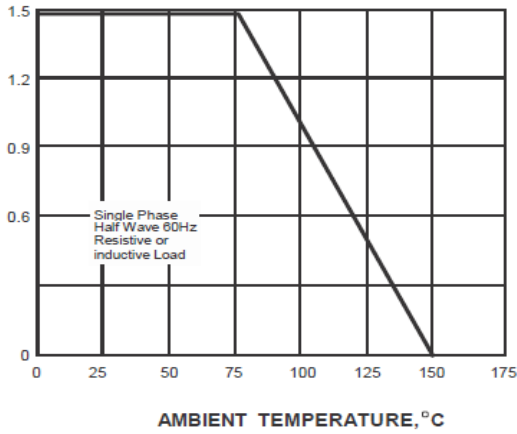


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RATINGS AND CHARACTERISTIC CURVES

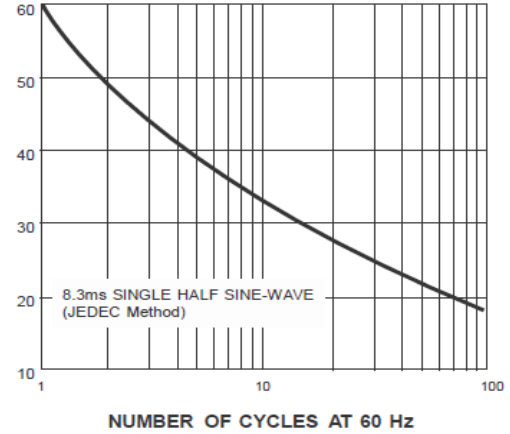
AVERAGE FORWARD RECTIFIED CURRENT,
AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



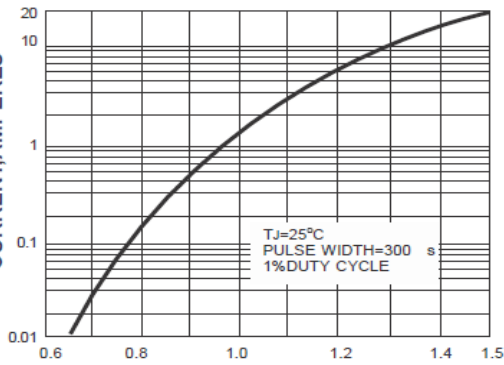
PEAK FORWARD SURGE CURRENT,
AMPERES

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



INSTANTANEOUS FORWARD
CURRENT,AMPERES

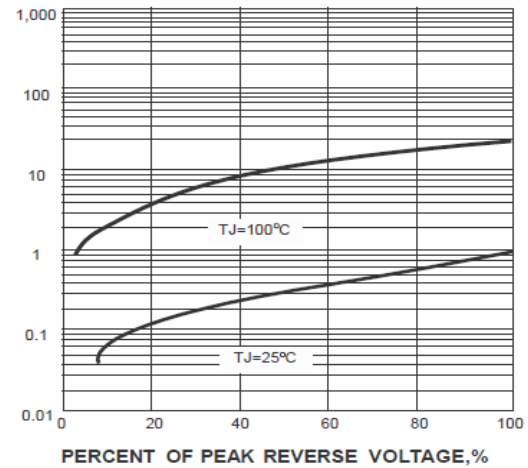
FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



INSTANTANEOUS FORWARD VOLTAGE,
VOLTS

INSTANTANEOUS REVERSE CURRENT,
MICROAMPERES

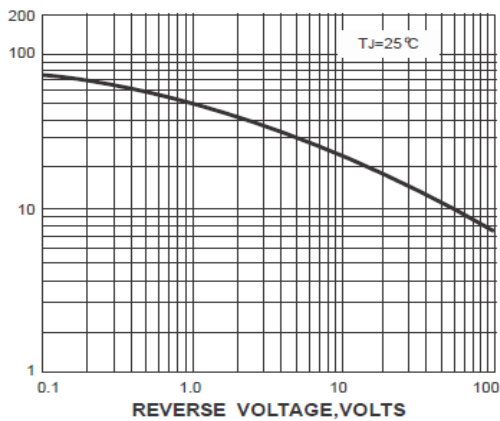
FIG. 4-TYPICAL REVERSE CHARACTERISTICS



PERCENT OF PEAK REVERSE VOLTAGE, %

JUNCTION CAPACITANCE, pF

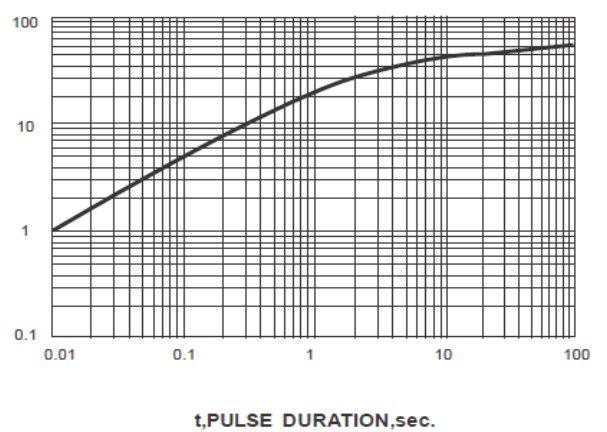
FIG. 5-TYPICAL JUNCTION CAPACITANCE



REVERSE VOLTAGE,VOLTS

TRANSIENT THERMAL IMPEDANCE,
°C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



t,PULSE DURATION,sec.