

HIGH VOLTAGE FAST RECOVERY RECTIFIER

Features

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ Construction utilizes void-free molded plastic technique
- ◆ Low reverse leakage
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed:
250°C/10 seconds, 0.375" (9.5mm) lead length, 5 lbs. (2.3kg) tension



Mechanical Data

Case : JEDEC DO-41/DO-15 Molded plastic body

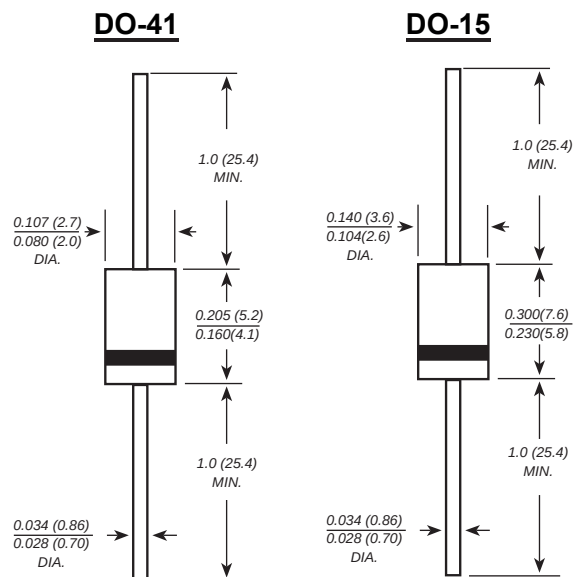
Terminals : Solder plated, solderable per MIL-STD-750, Method 2026

Polarity : Polarity symbol marking on body

Mounting Position : Any

Weight : 0.012 ounce, 0.33 grams (DO-41)

0.014 ounce, 0.40 grams (DO-15)



Dimensions in inches and (millimeters)

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	MDD R2500F	MDD R3000F	MD R4000F	MDD R5000F	UNITS
Marking Code						
Maximum repetitive peak reverse voltage	V_{RRM}	2500	3000	4000	5000	V
Maximum RMS voltage	V_{RMS}	1750	2100	2800	3500	V
Maximum DC blocking voltage	V_{DC}	2500	3000	4000	5000	V
Maximum average forward rectified current 0.375" (9.5mm) lead length (see fig.1)	I_{AV}	0.2				A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	30.0				A
Maximum instantaneous forward voltage at 0.2A	V_F	4.0	5.0	6.5		V
Maximum DC reverse current $T_A=25^{\circ}C$ at rated DC blocking voltage $T_A=100^{\circ}C$	I_R	5.0 50.0				μA
Maximum reverse recovery time (NOTE 1)	t_{rr}	500				ns
Typical junction capacitance (NOTE 2)	C_J	15.0				pF
Typical thermal resistance (NOTE 3)	$R_{\theta JA}$	50.0				$^{\circ}C/W$
Operating junction and storage temperature range	T_J, T_{STG}	-65 to +150				$^{\circ}C$

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

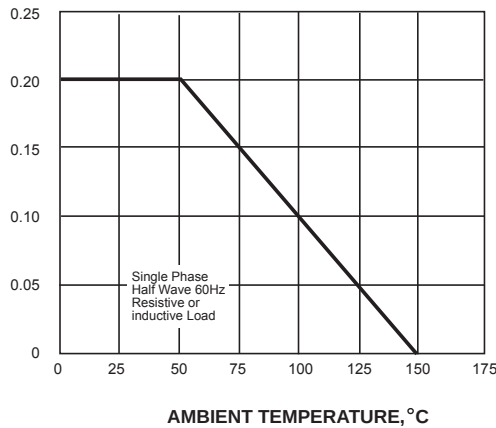
2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.

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

Ratings And Characteristic Curves

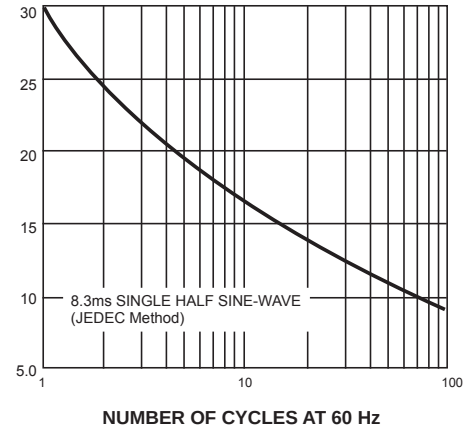
AVERAGE FORWARD RECTIFIED CURRENT,
AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



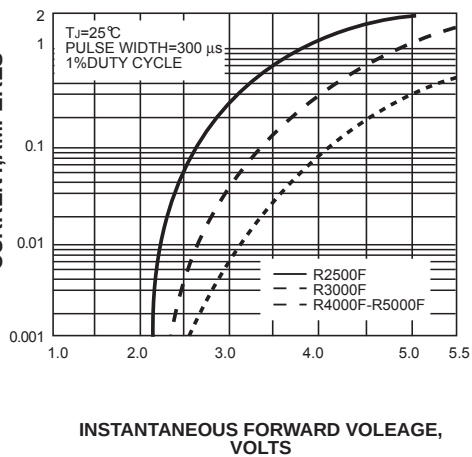
*PEAK FORWARD SURGE CURRENT,
AMPERES

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



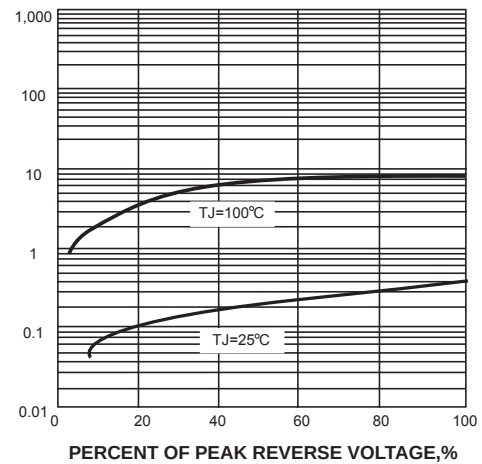
INSTANTANEOUS FORWARD CURRENT, AMPERES

FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



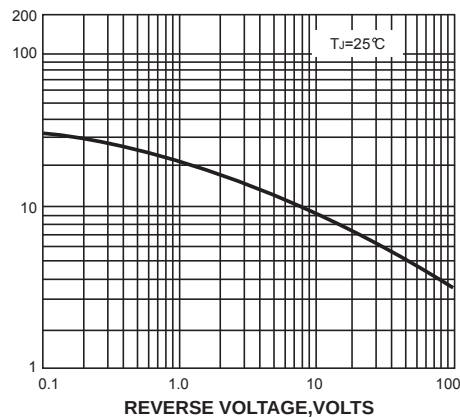
INSTANTANEOUS REVERSE CURRENT,
MICROAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS



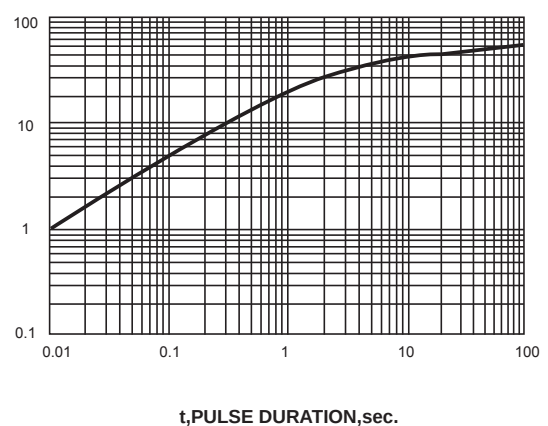
JUNCTION CAPACITANCE, pF

FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE,
°C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



The curve above is for reference only.