

Small-Signal Diode- Fast Switching Rectifier

Reverse Voltage 100 Volts Forward Current 0.15 Ampere

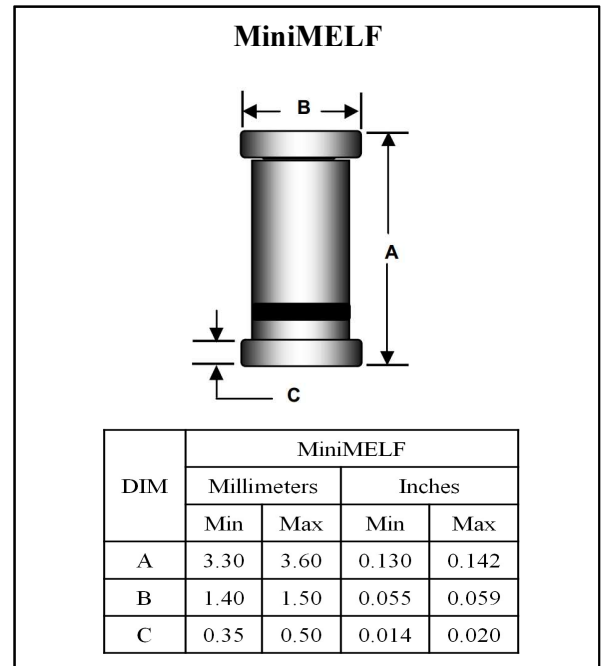
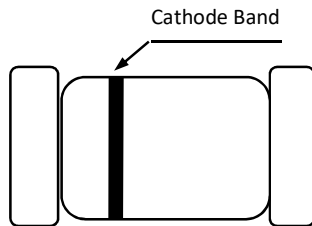
Features

- Silicon Epitaxial Planar Diode
- Fast switching diode in MiniMELF case especially suited for automatic insertion
- This diode is also available in other case styles including the DO-35 case with the type designation 1N4148.

Mechanical Data

- Case: MiniMELF Glass Case (SOD-80C)
- Cathode band color : Black
- Weight: 0.05g (approx.)

Marking



Maximum Ratings & Electrical Characteristics (Ta=25°C unless otherwise noted)

Parameter	Symbol	Rated Value	Unit	Remark
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	100	V	
Reverse Voltage	V_R	75	V	
Forward DC Current	I_F	200	mA	
Average Rectified Current Half Wave Rectification with Resistive Load	$I_{F(AV)}$	150	mA	$f \geq 50\text{Hz}$
Peak Forward Surge Current at $t < 1\text{S}$	I_{FSM}	500	mA	
Power Dissipation	P_{tot}	500	mW	
Thermal Resistance	$R_{th(j-a)}$	350	°C/W	Note 1
	$R_{th(j-tp)}$	300	°C/W	
Maximum Instantaneous Forward Voltage	V_F	1.0	V	$I_F = 10\text{mA}$
Maximum DC Reverse Current at Rated DC Blocking Voltage	I_R	25	nA	$V_R = 20\text{V}, T_J = 25^\circ\text{C}$
		5.0	uA	$V_R = 75\text{V}, T_J = 25^\circ\text{C}$
		50.0	uA	$V_R = 20\text{V}, T_J = 150^\circ\text{C}$
Maximum Total Capacitance	C_{tot}	4.0	pF	Note 2
Maximum Voltage Rise When Switching on (Tested with 50mA forward Pulse)	V_{fr}	2.5	V	Note 3
Maximum Reverse Recovery Time	t_{rr}	4.0	ns	
Minimum Rectification Efficiency ($f = 100\text{MHz}, V_{RF} = 2.0\text{V}$, See third page)	η_V	0.45	-	
Operation Junction Temperature Range	T_J	-65 to +175	°C	
Storage Temperature Range	T_{STG}	-65 to +175	°C	

Note 1. Device mounted on FR4 printed-circuit board

Note 2. Measured at 1.0MHz and applied reverse voltage of Zero volts

Note 3. Measured at $T_p = 0.1\mu\text{s}$, rise time $< 30\text{ns}$ and $f_p = 5$ to 100kHz

Ratings and Characteristics Curves (Ta=25°C unless otherwise noted)

Fig.1 Typical instantaneous forward characteristics

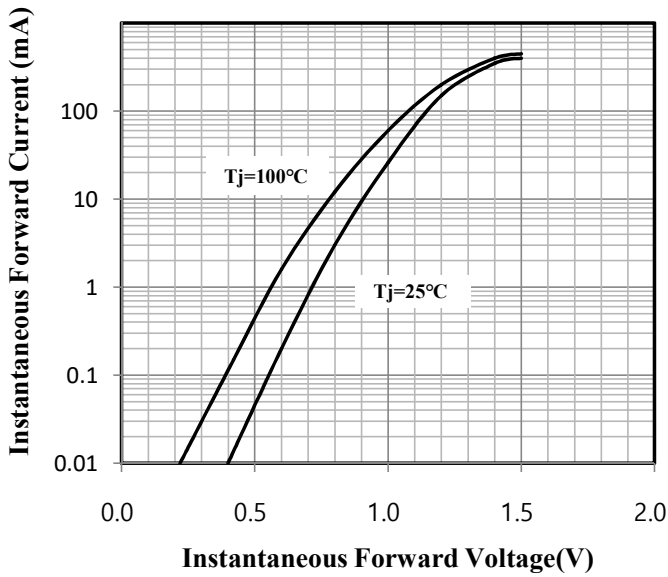


Fig.2 Dynamic forward resistance versus forward current

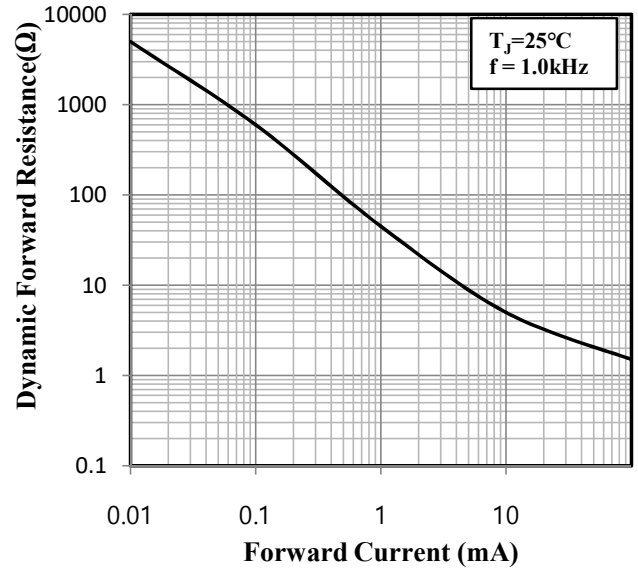


Fig. 3 Admissible power dissipation versus ambient temperature

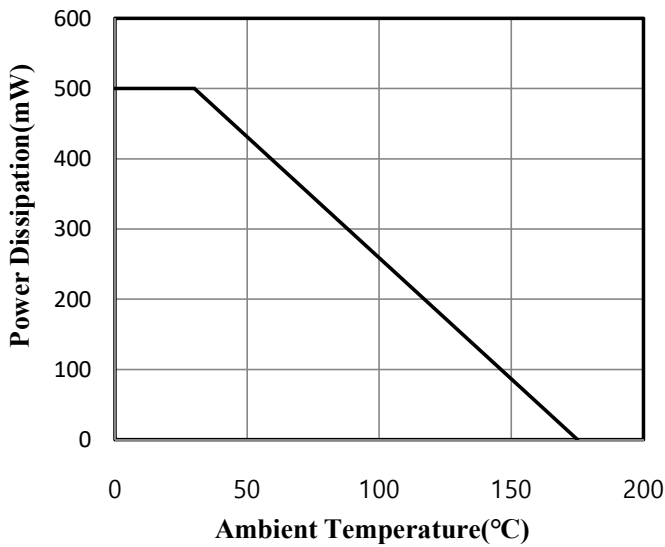
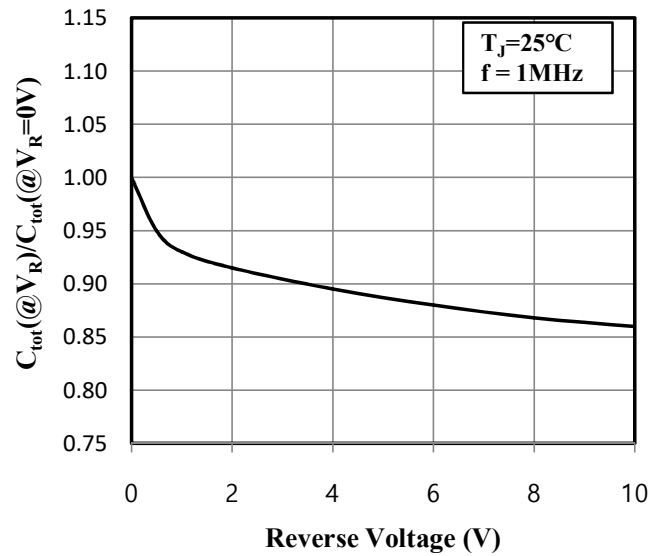


Fig.4 Relative capacitance versus reverse voltage



Ratings and Characteristics Curves (Ta=25°C unless otherwise noted)

Fig.5 Leakage current versus junction temperature

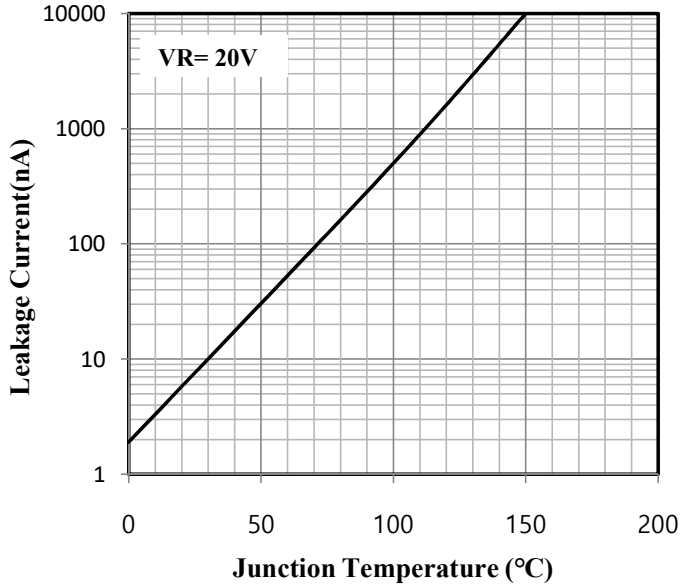
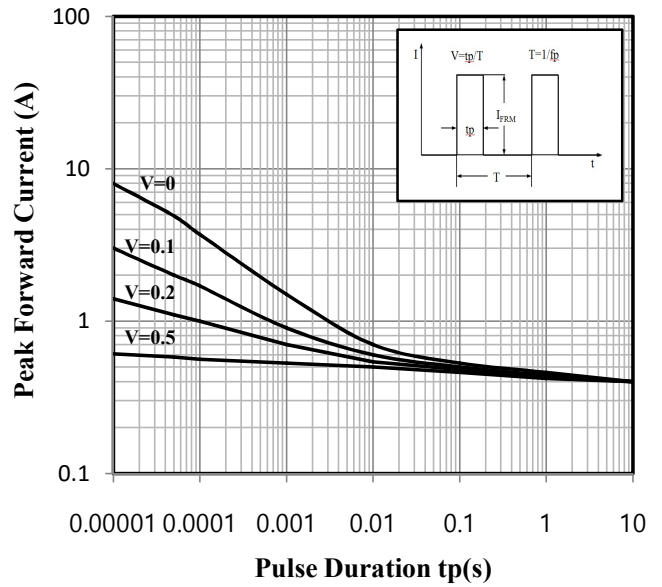


Fig.6 Admissible repetitive peak forward current versus pulse duration



Rectification Efficiency Measurement Circuit

