

Small Signal Switching Diode

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Features:

- Silicon epitaxial planar diode
- High speed switching diode
- 500mW power dissipation
- These diodes are also available in glass case DO-34. Mini-MELF

Mechanical Data:

- Case: DO-35, glass case
- Polarity: Colour band denotes cathode
- Weight: 0.004oz, 0.13g

Maximum Ratings and Electrical Characteristics:

Ratings at 25°C ambient temperature unless otherwise specified.

Characteristics		1N4148-T	Units
Reverse voltage	V _R	75	V
Peak reverse voltage	V _{RM}	100	V
Average forward rectified current half wave rectification with resist. load at T _A =25°C and f ≥ 50Hz	I _{AV}	150	mA
Forward surge current at t < 1s and T _J = 25°C	I _{FSM}	500	mA
Power dissipation at T _A =25°C (Note 1)	P _{tot}	500	mW
Junction temperature	T _J	175	°C
Storage temperature range	T _{STG}	-55 to +175	°C

Note

(1) Valid provided that leads at a distance of 8mm from case are kept at ambient temperature.

Electrical Characteristics:

Characteristics		Min.	Typ.	Max.	Units
Forward voltage at I _F =10mA	V _F	-	-	1	V
Leakage current at V _R =20V at V _R =75V at V _R =20V T _J = 150	I _R	- - -	- - -	25 5 50	nA μA μA
Capacitance at V _F =V _R =0V	C _J	-	-	4	pF
Voltage rise when switching on tested with 50mA pulses tp=0.1μs. Rise time <30ns. fp=5 to 100kHz	V _{fr}	-	-	2.5	V
Reverse recovery time from I _F =10mA to I _R =1mA V _R =6V. R _L =100Ω	t _{rr}	-	-	4	ns
Thermal resistance junction to ambient (Note 1)	R _{θJA}			350	k/W
Rectification efficiency at 100MHz, V _{RF} =2V	η _V	0.45	-	-	-

Note

(1) Valid provided that leads at a distance of 8mm from case are kept at ambient temperature.

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FIG.1 – ADMISSIBLE POWER DISSIPATION VERSUS AMBIENT TEMPERATURE

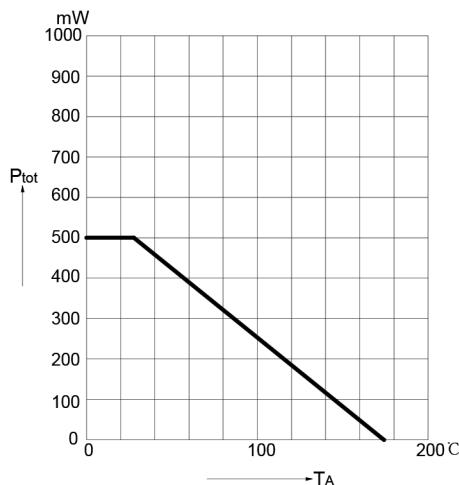


FIG.2 – FORWARD CHARACTERISTICS

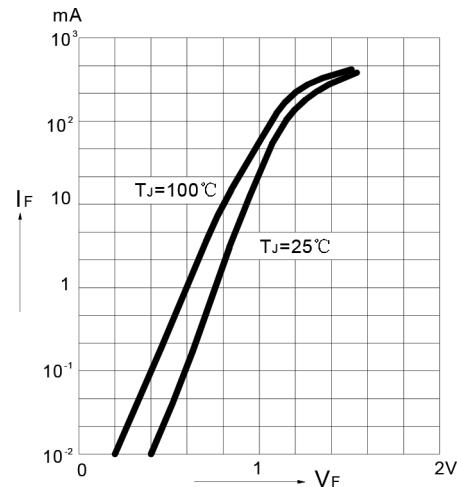


FIG.3 – ADMISSIBLE REPETITIVE PEAK FORWARD CURRENT VERSUS PULSE DURATION

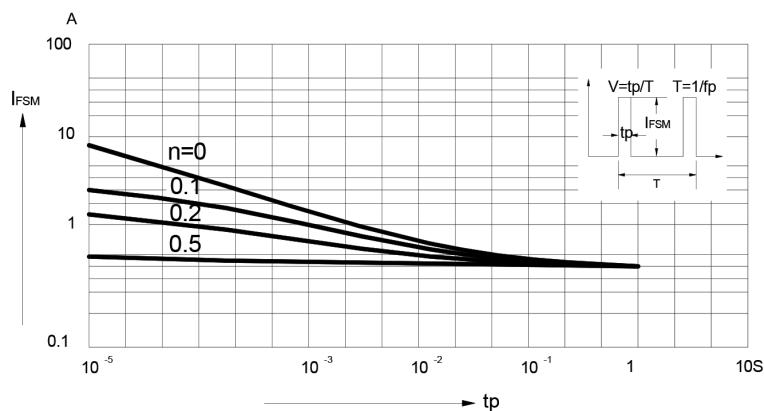
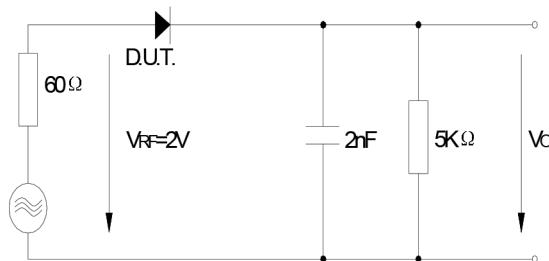


FIG.4 – RECTIFICATION EFFICIENCY MEASUREMENT CIRCUIT



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FIG.5 – RELATIVE CAPACITANCE VERSUS VOLTAGE

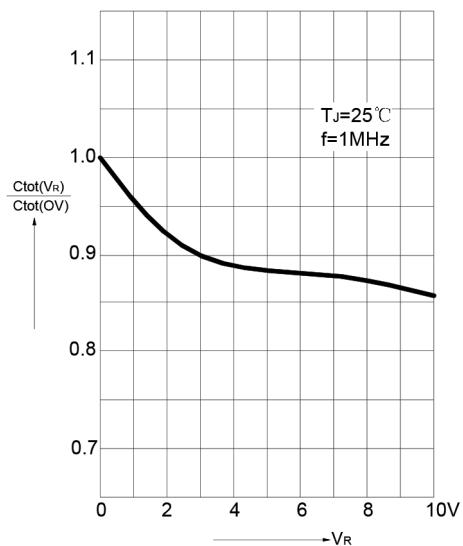


FIG.6 – LEAKAGE CURRENT VERSUS JUNCTION TEMPERATURE

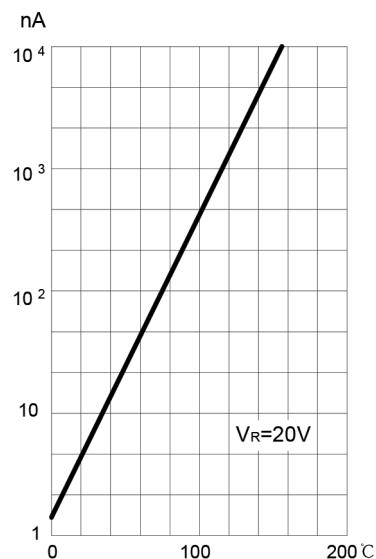
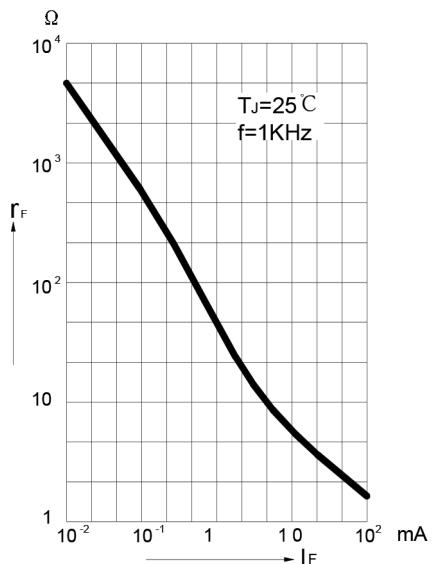


FIG.7 – DYNAMIC FORWARD RESISTANCE VERSUS FORWARD CURRENT



Part Number Table

Description	Part Number
Small Signal Switching Diode	1N4148-T

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