

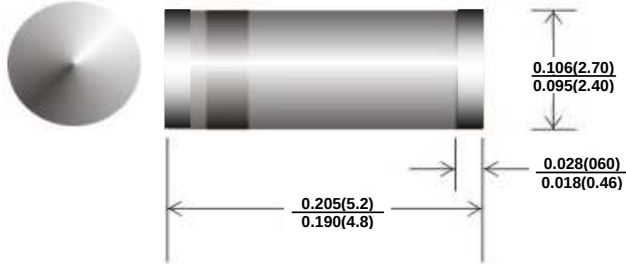


ESM1A THRU ESM1J

SURFACE MOUNT SUPER FAST RECOVERY RECTIFIER

Reverse Voltage - 50 to 600 Volts Forward Current - 1.0 Ampere

MELF



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
- ◆ High reliability
- ◆ Pb free product : 99% Sn above can meet RoHS environment substance directive request

MECHANICAL DATA

Case: MELF(JEDEC DO-213AB), Molded plastic

Terminals: Solderable per MIL-STD-750 Method 2026

Approx. Weight: 0.15 gram

Polarity: Color band denotes cathode end

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	ESM1A	ESM1B	ESM1C	ESM1D	ESM1G	ESM1J	UNITS
Maximum repetitive peak reverse voltage	V _{RRM}	50	100	150	200	400	600	Volts
Maximum RMS voltage	V _{RMS}	35	70	105	140	420	560	Volts
Minimum Reverse Breakdown Voltage	V _R	50	100	150	200	400	600	Volts
Average Rectified current at T _L =55℃	I _(AV)	1.0						Amp
Non-repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I _{FSM}	30						Amps
Maximum Forward Voltage at I _F =1.0A	V _F	0.95			1.25	1.70		Volts
Reverse Leakage Current at V _{RRM}	I _R	5						μA
Maximum reverse recovery time (NOTE 1)	t _{rr}	35						nS
Typical Junction Capacitance (NOTE 2)	C _J	17						pF
Typical Thermal Resistance (NOTE 3)	R _{θJA}	180						℃/W
Operating Junction Temperature Range	T _J	150						℃
Storage Temperature Range	T _{STG}	-55 ~ +150						℃

- 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. Mounted with minimum recommended padsize, PCBBoard FR4.



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RATINGS AND CHARACTERISTIC CURVES

FIG. 1- FORWARD CURRENT DERATING CURVE

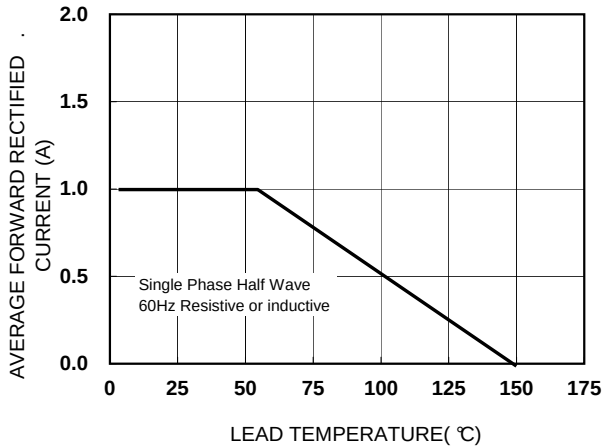


FIG. 2--MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

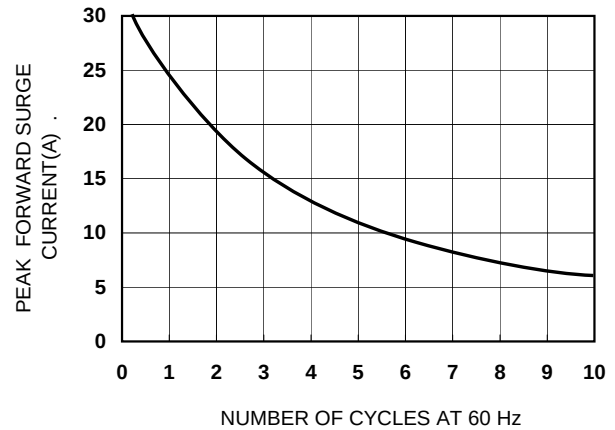


FIG. 3-TYPICAL REVERSE CHARACTERISTICS

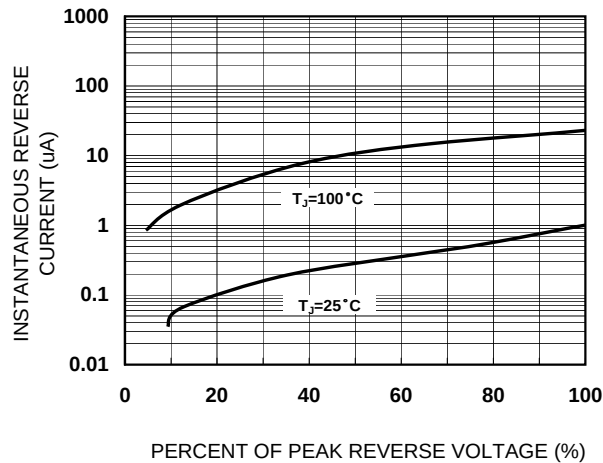


FIG. 4-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

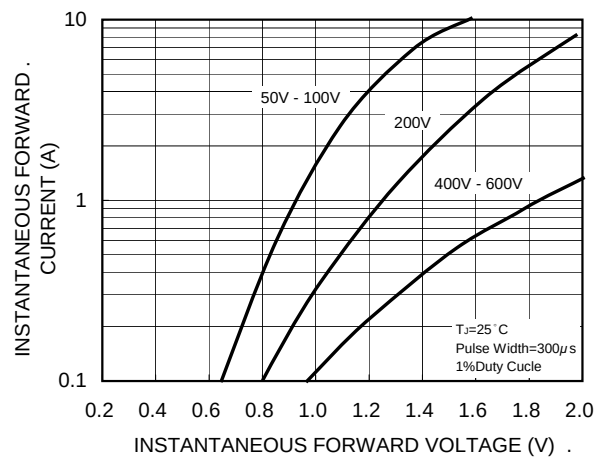


FIG. 5-TYPICAL JUNCTION CAPACITANCE

