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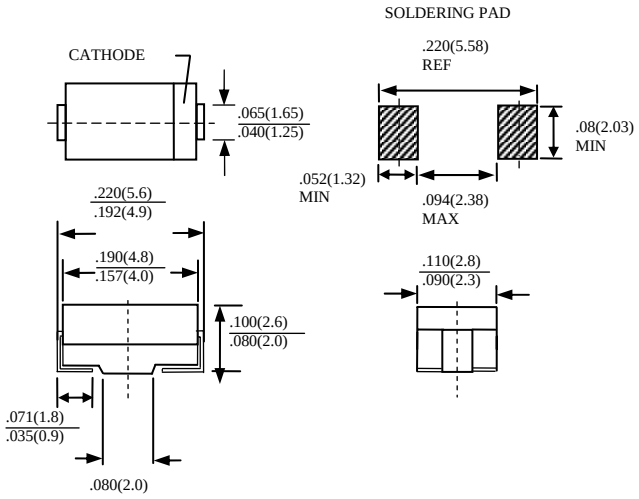
1A SURFACE MOUNT FAST EFFICIENT RECOVERY RECTIFIERS

ES1A-LFR THRU ES1J-LFR



FEATURES

- FOR SURFACE MOUNTED APPLICATIONS
- LOW PROFILE PACKAGE
- BUILT-IN STRAIN RELIEF
- EASY PICK AND PLACE
- GLASS PASSIVATED CHIP JUNCTION
- PLASTIC MATERIAL USED CARRIES UNDERWRITERS LABORATORY CLASSIFICATION 94 V-0
- HIGH TEMPERATURE SOLDERING:250°C/10 SECONDS AT TERMINALS
- ROHS

MECHANICAL DATA

- CASE: MOLDED PLASTIC, DO-214AC (SMA), DIMENSIONS IN INCHES AND (MILLIMETERS)
- TERMINALS: SOLDER PLATED
- POLARITY: INDICATED BY CATHODE BAND
- WEIGHT: 0.064 GRAMS

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS RATINGS AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE SPECIFIED SINGLE PHASE, HALF WAVE, 60 HZ, RESISTIVE OR INDUCTIVE LOAD. FOR CAPACITIVE LOAD, DERATE CURRENT BY 20%

RATINGS	SYMBOL	ES1A-LFR	ES1B-LFR	ES1D-LFR	ES1E-LFR	ES1G-LFR	ES1J-LFR	UNITS
MAXIMUM RECURRENT PEAK REVERSE VOLTAGE	V_{RRM}	50	100	200	300	400	600	V
MAXIMUM RMS VOLTAGE	V_{RMS}	35	70	140	210	280	420	V
MAXIMUM DC BLOCKING VOLTAGE	V_{DC}	50	100	200	300	400	600	V
MAXIMUM AVERAGE FORWARD RECTIFIED CURRENT AT TL=90°C	I_O	1.0						A
MAXIMUM OVERLOAD SURGE 8.3ms SINGLE HALF SINE-WAVE	I_{FSM}	30						A
TYPICAL JUNCTION CAPACITANCE (NOTE 1)	C_J	15			10			PF
TYPICAL THERMAL RESISTANCE (NOTE 2)	θ_{JL}	30						°C/W
STORAGE TEMPERATURE RANGE	T_{STG}	-55 TO + 150						℃
OPERATING TEMPERATURE RANGE	T_{OP}	-55 TO + 125						℃

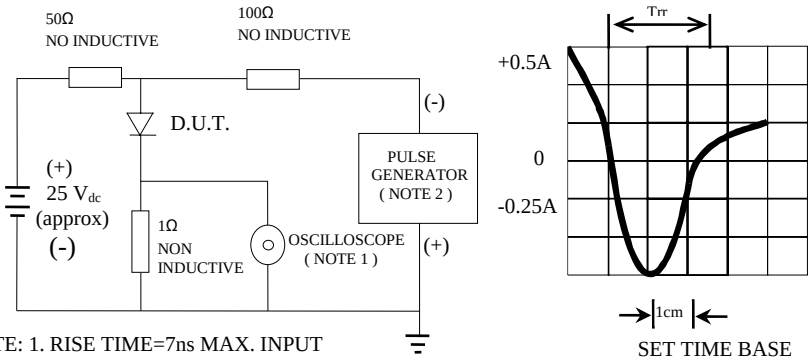
ELECTRICAL CHARACTERISTICS (A_T T_A =25°C UNLESS OTHERWISE NOTED)

CHARACTERISTICS	SYMBOL	ES1A-LFR	ES1B-LFR	ES1D-LFR	ES1E-LFR	ES1G-LFR	ES1J-LFR	UNITS
MAXIMUM FORWARD VOLTAGE AT 1.0A AND 25℃	V_F	0.98			1.25		1.75	V
MAXIMUM REVERSE CURRENT AT 25℃	I_R	10						μA
MAXIMUM REVERSE RECOVERY TIME (NOTE 3)	T_{RR}	25						nS
MARKING		ES1A	ES1B	ES1D	ES1E	ES1G	ES1J	

NOTE: 1. MEASURED AT 1.0 MHZ AND APPLIED REVERSE VOLTAGE OF 4.0 V
2. THERMAL RESISTANCE FROM JUNCTION TO TERMINAL 5.0mm^2 (.013 mm THICK) LAND AREAS
3. REVERSE RECOVERY TEST CONDITIONS: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A

RATINGS AND CHARACTERISTIC CURVE ES1A-LFR THRU ES1J-LFR

FIG. 1-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



NOTE: 1. RISE TIME=7ns MAX. INPUT IMPEDANCE=1 MOhms 22PF
2. RISE TIME =10ns MAX. SOURCE IMPEDANCE=50 OHMS

SET TIME BASE FOR 10/20 ns/cm

FIG. 2-TYPICAL FORWARD CURRENT DERATING CURVE

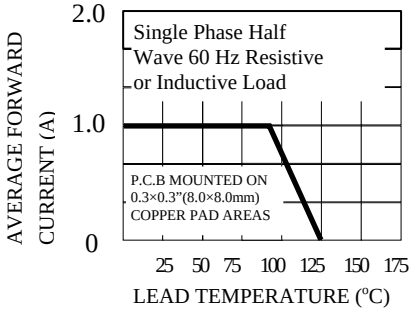


FIG. 3-TYPICAL REVERSE CHARACTERISTICS

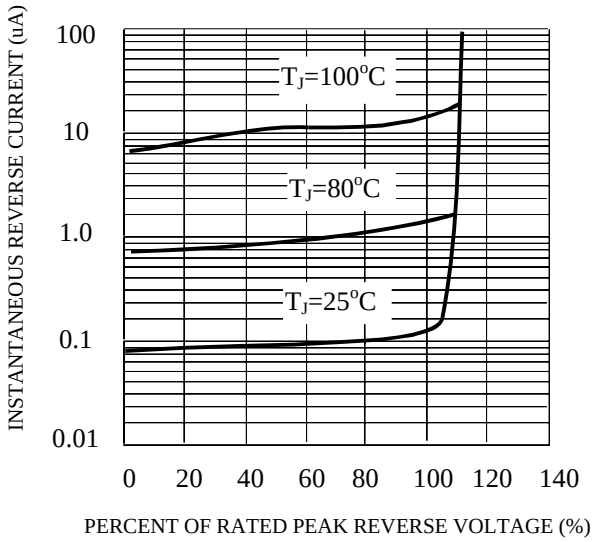


FIG. 4-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

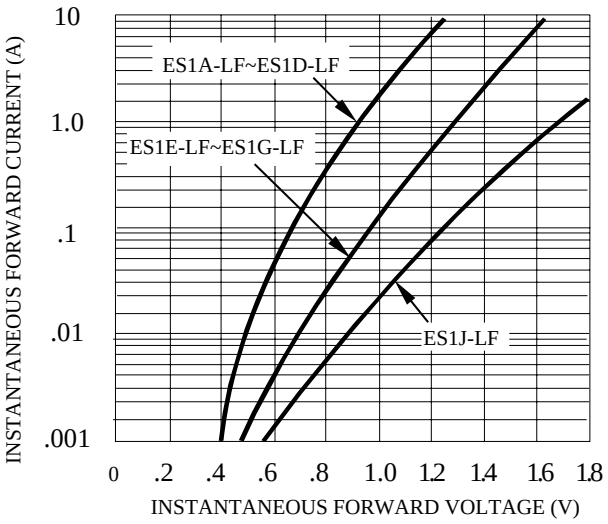


FIG. 5-MAXIMUN NON-REPETITIVE FORWARD SURGE CURRENT

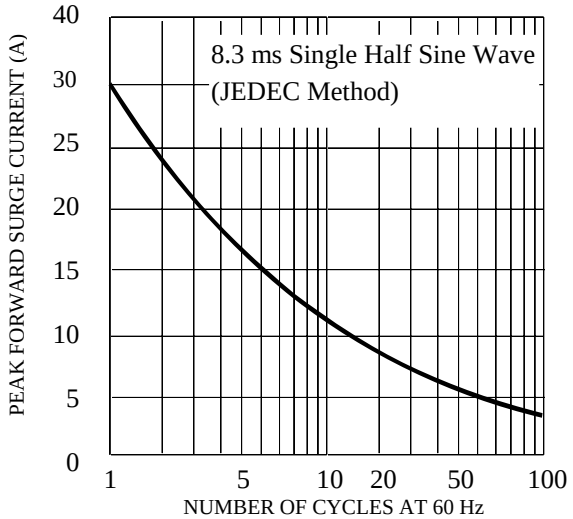


FIG. 6-TYPICAL JUNCTION CAPACITANCE