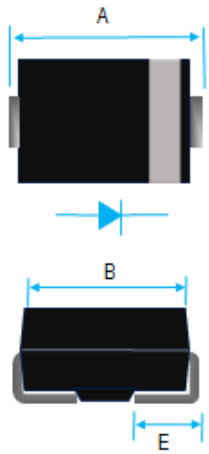
US3A THRU US3M SPECIFICATIONS

Rev. A

3A ULTRA FAST RECOVERY SURFACE MOUNT RECTIFIER



Dim.	Value Inch[mm] Min.	Max.
A	0.305[7.75]	0.320[8.13]
B	0.260[6.60]	0.280[7.11]
C	0.220[5.59]	0.245[6.22]
D	0.079[2.01]	0.111[2.82]
E	0.030[0.76]	0.060[1.52]
F	0.114[2.90]	0.126[3.20]

PRODUCT FEATURES

1. FLAMMABILITY CLASSIFICATION: 94V-0
2. GLASS PASSIVATED CHIP JUNCTION
3. BUILT-IN STRAIN RELIEF
4. LOW PROFILE
5. ULTRA FAST SWITCHING
6. CASE: MOLDED PLASTIC, DO-214AB (SMC-F)
7. POLARITY: INDICATED BY CATHODE BAND
8. WEIGHT: 0.21 GRAMS
9. LEADS: SOLDERABILITY PER MIL-STD-750 METHOD 2026
10. RoHS

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS RATINGS AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE SPECIFIED STORAGE AND OPERATING TEMPERATURE RANGE -55°C TO +150°C. SINGLE PHASE, HALF WAVE, 60 HZ, RESISTIVE OR INDUCTIVE LOAD. FOR CAPACITIVE LOAD, DERATE CURRENT BY 20%.

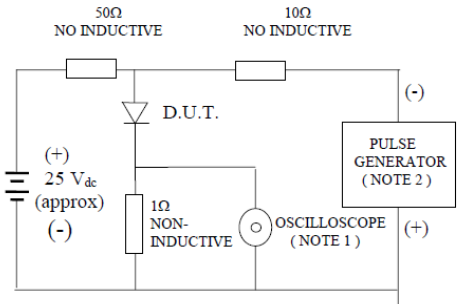
RATINGS	SYMBOL	VALUE	UNITS
MAXIMUM AVERAGE FORWARD RECTIFIED CURRENT @ 75°C	I_O	3	A
PEAK FWD SURGE CURRENT, 8.3ms HALF SINE-WAVE SUPERIMPOSED ON RATED LOAD	I_{FSM}	100	A
TYPICAL JUNCTION CAPACITANCE(NOTE1)	C_J	75	pF
TYPICAL THERMAL RESISTANCE (NOTE 2)	$R_{\theta ja}$	15	℃/W
MAXIMUM REVERSE CURRENT @ 25℃	I_R	10	uA
MAXIMUM REVERSE CURRENT @ 125 ℃	I_R	250	uA

1. C_j MEASURED @ 1 MHZ AND APPLIED REVERSE VOLTAGE OF 4.0 VOLTS
2. THERMAL RESISTANCE FROM JUNCTION TO AMBIENT AND JUNCTION TO LEAD PCB MOUNTED ON 0.3×0.3”(8.0×8.0mm) COPPER PAD AREAS
3. REVERSE RECOVERY TEST CONDITIONS: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A
4. MAXIMUM FORWARD VOLTAGE @ I_o DC

PART NUMBER	MAX RECURRENT PEAK REV VOLTAGE V_{RRM} (V)	MAX RMS VOLTAGE V_{RMS} (V)	MAX DC BLOCKING VOLTAGE V_{DC} (V)	MAX FWD VOLTAGE V_F (V)	MAX REVERSE RECOVERY TIME T_{RR} (nS)
US3A	50	35	50	1.0	50
US3B	100	70	100	1.0	50
US3D	200	140	200	1.0	50
US3G	400	280	400	1.3	50
US3J	600	420	600	1.7	75
US3K	800	560	800	1.7	75
US3M	1000	700	1000	1.85	75

RATING AND CHARACTERISTIC CURVES

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

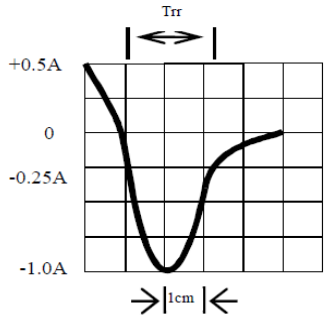


FIG. 2-TYPICAL FORWARD CURRENT DERATING CURVE

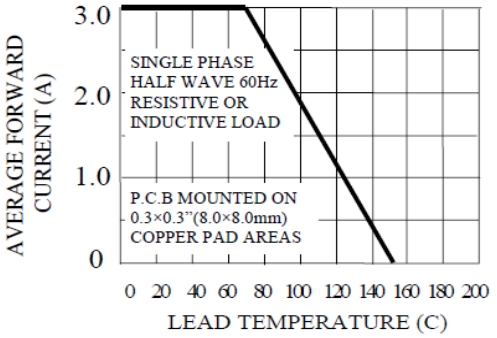


FIG. 3-TYPICAL REVERSE CHARACTERISTICS

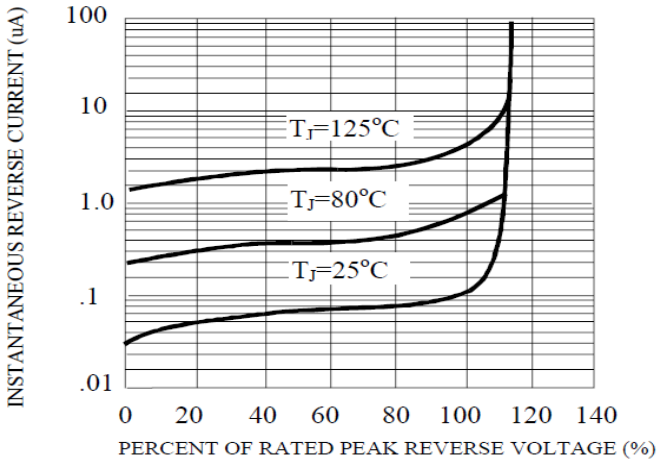


FIG. 4-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

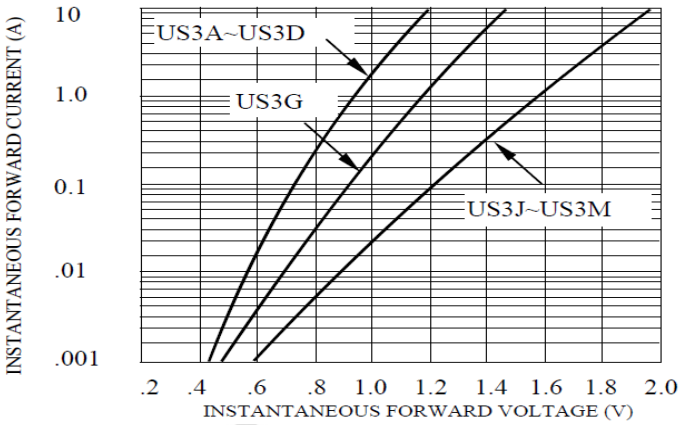


FIG. 5-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

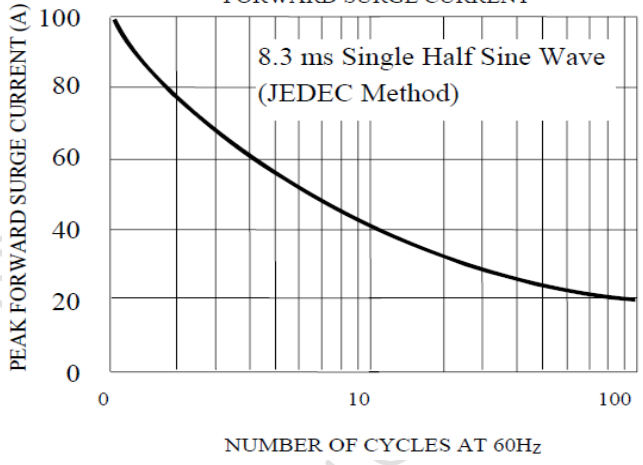


FIG. 6-TYPICAL JUNCTION CAPACITANCE