



Micro Commercial Components



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US1AE THRU US1ME

1 Amp Ultra Fast Rectifier 50 to 1000 Volts

Features

- Halogen free available upon request by adding suffix "-HF"
- Ultra Fast Switching For High Efficiency
- For Surface Mounted Applications
- Low Forward Voltage Drop And High Current Capability
- Low Reverse Leakage Current
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

Maximum Ratings

- Lead Free Finish/RoHS Compliant(NOTE 1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Operating Temperature: -50°C to +150°C
- Storage Temperature: -50°C to +150°C
- Maximum Thermal Resistance; 30°C/W Junction To Lead

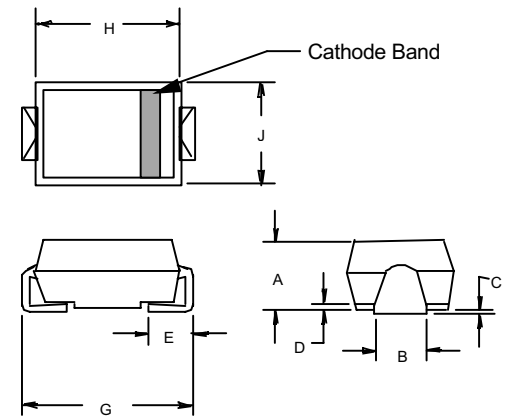
MCC Catalog Number	Device Marking	Maximum Recurrent Peak Reverse Voltage	Maximum RMS Voltage	Maximum DC Blocking Voltage
US1AE	US1A	50V	35V	50V
US1BE	US1B	100V	70V	100V
US1CE	US1C	150V	105V	150V
US1DE	US1D	200V	140V	200V
US1GE	US1G	400V	280V	400V
US1JE	US1J	600V	420V	600V
US1KE	US1K	800V	560V	800V
US1ME	US1M	1000V	700V	1000V

Electrical Characteristics @ 25°C Unless Otherwise Specified

Average Forward Current	$I_{F(AV)}$	1.0A	$T_L = 110^\circ\text{C}$
Peak Forward Surge Current	I_{FSM}	30A	8.3ms, half sine
Maximum Instantaneous Forward Voltage	V_F	US1AE-1DE: 1.0V US1GE: 1.4V US1JE-1ME: 1.7V	$I_{FM} = 1.0\text{A}; T_J = 25^\circ\text{C}$
Maximum DC Reverse Current At Rated DC Blocking Voltage	I_R	10 μA 100 μA	$T_A = 25^\circ\text{C}$ $T_A = 100^\circ\text{C}$
Maximum Reverse Recovery Time	T_{rr}	US1AE-1GE: 50ns US1JE-1ME: 75ns	$I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$
Typical Junction Capacitance	C_J	US1AE-1GE: 20pF US1JE-1ME: 17pF	Measured at 1.0MHz, $V_R=4.0\text{V}$

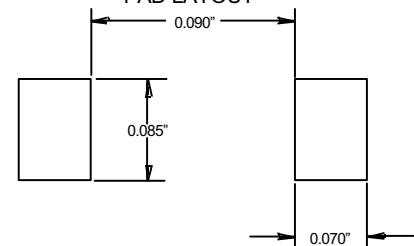
Notes: 1. High Temperature Solder Exemption Applied, see EU Directive Annex Notes 7

(SMAE)



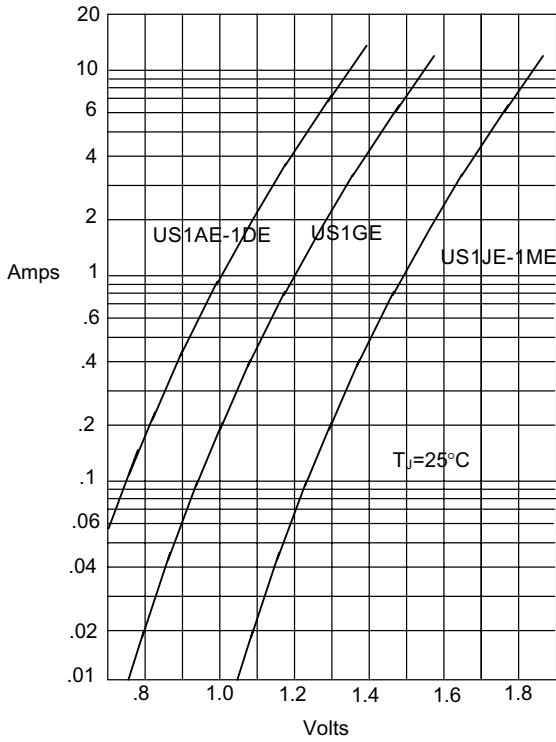
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.079	.096	2.01	2.44	
B	.045	.071	1.15	1.80	
C	.002	.008	.05	.20	
D	---	.02	---	.51	
E	.030	.060	.76	1.52	
G	.189	.208	4.80	5.30	
H	.157	.180	4.00	4.57	
J	.090	.115	2.29	2.92	

SUGGESTED SOLDER PAD LAYOUT



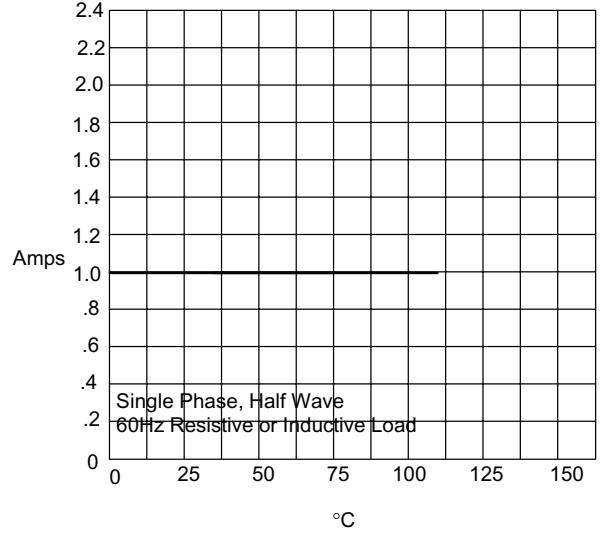
US1AE thru US1ME

Figure 1
Typical Forward Characteristics



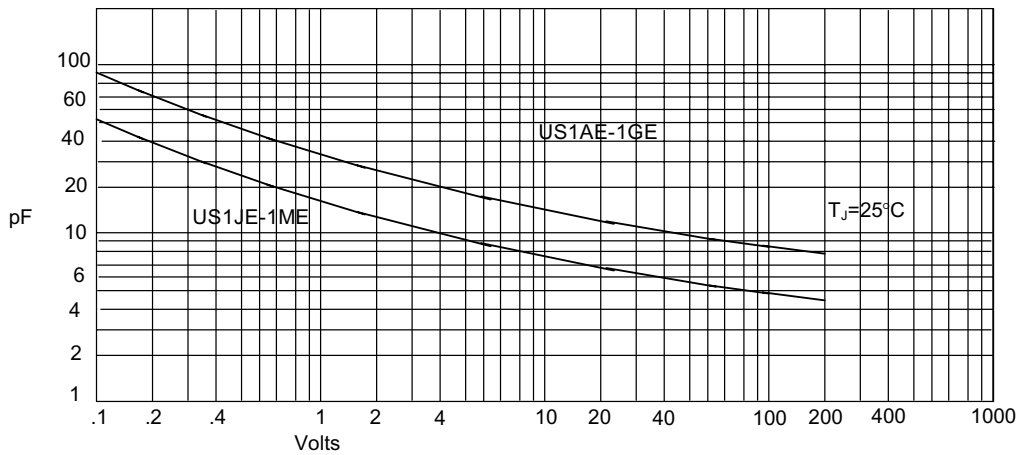
Instantaneous Forward Current - Amperes versus
Instantaneous Forward Voltage - Volts

Figure 2
Forward Derating Curve



Average Forward Rectified Current - Amperes versus
Lead Temperature - $^\circ\text{C}$

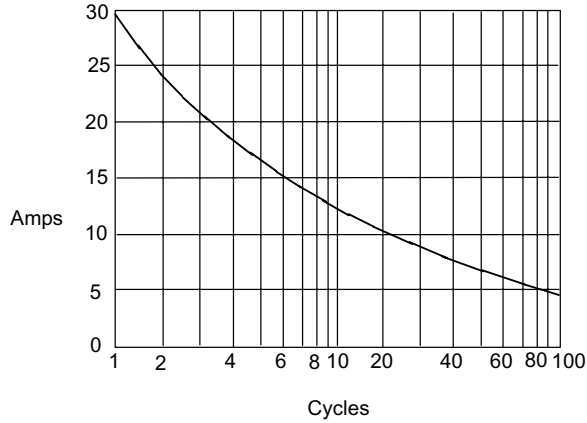
Figure 3
Junction Capacitance



Junction Capacitance - pF versus
Reverse Voltage - Volts

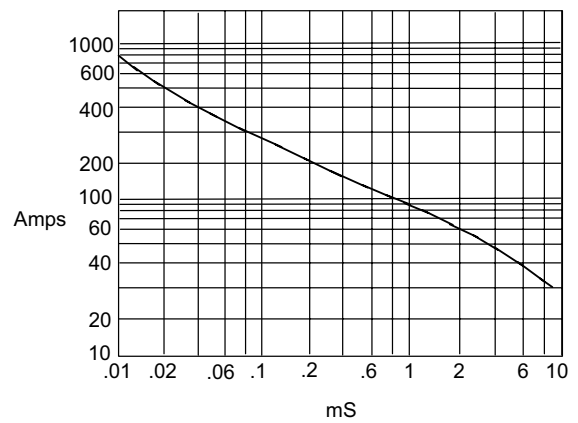
US1AE thru US1ME

Figure 4
Peak Forward Surge Current



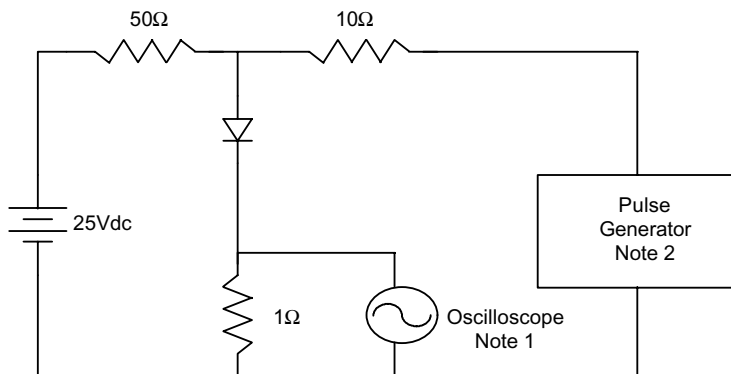
Peak Forward Surge Current - Amperes *versus* Number Of Cycles At 60Hz - Cycles

Figure 5
Peak Forward Surge Current



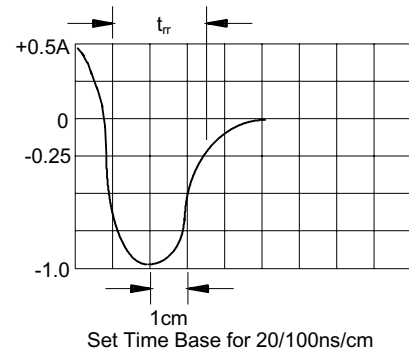
Peak Forward Surge Current - Amperes *versus* Pulse Duration - Milliseconds (mS)

Figure 6
Reverse Recovery Time Characteristic And Test Circuit Diagram



Notes:

1. Rise Time = 7ns max.
Input impedance = 1 megohm, 22pF
2. Rise Time = 10ns max.
Source impedance = 50 ohms
3. Resistors are non-inductive





Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel: 6Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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