

Features

- Ultra Fast Switching for High Efficiency
- Glass Passivated Junction
- Lead Free Finish/RoHS Compliant (Note 1)("P" Suffix Designates RoHS Compliant. See Ordering Information)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free. "Green" Device (Note 2)
- Moisture Sensitivity Level 1

Maximum Ratings @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Value								Unit
		US 1AFL	US 1BFL	US 1CFL	US 1DFL	US 1GFL	US 1JFL	US 1KFL	US 1MFL	
Peak Repetitive Reverse Voltage	V_{RRM}									V
Working Peak Reverse Voltage	V_{RWM}	50	100	150	200	400	600	800	1000	
DC Blocking Voltage	V_R									
RMS Reverse Voltage	V_{RMS}	35	70	105	140	280	420	560	700	V
Average Rectified Forward Current @ $T_L=110^\circ\text{C}$	$I_{F(AV)}$	1								A
Non-Repetitive Peak Surge Current @ 8.3ms Half Sine Wave	I_{FSM}	30								A
Current Squared Time @ $1\text{ms} \leq t \leq 8.3\text{ms}$	I^2t	3.735								A ² s

Marking Code

Part Number	Marking Code
US1AFL	US1A
US1BFL	US1B
US1CFL	US1C
US1DFL	US1D
US1GFL	US1G
US1JFL	US1J
US1KFL	US1K
US1MFL	US1M

Internal Structure

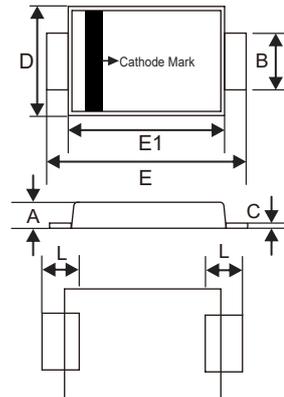
Simplified Outline	Graphic Symbol

Note:

1. High temperature solder exemption applied, see EU directive annex 7a.
2. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

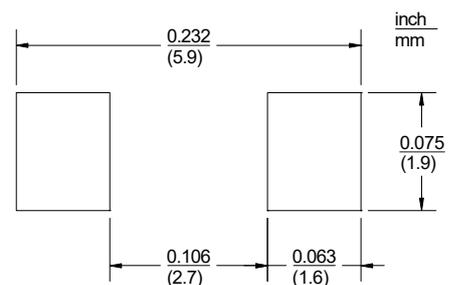
1.0 Amp Ultra Fast Rectifier 50 to 1000 Volts

DO-221AC(SMA-FL)



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.035	0.049	0.90	1.25	
B	0.049	0.065	1.25	1.65	
C	0.004	0.016	0.10	0.40	
D	0.089	0.116	2.25	2.95	
E	0.173	0.220	4.40	5.60	
E1	0.126	0.181	3.20	4.60	
L	0.020	0.059	0.50	1.50	

Suggested Solder Pad Layout



Thermal characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
T_J	Operating Junction Temperature Range		-55		150	°C
T_{stg}	Storage Temperature Range		-55		150	°C
$R_{th(J-L)}$	Thermal Resistance from Junction to Lead	Note 1		25		°C/W
$R_{th(J-A)}$	Thermal Resistance from Junction to Ambient	Note 1		70		°C/W

Note:

1. Mounted on P.C.B. with 8mm*8mm copper pad areas.

Electrical Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward Voltage US1AFL - US1DFL US1GFL US1JFL - US1MFL	V_F	$I_F=1A; T_J=25^\circ C$			1.0 1.3 1.7	V
Reverse Current	I_R	at Rated $V_R; T_J=25^\circ C$ at Rated $V_R; T_J=125^\circ C$			5 100	μA
Reverse Recovery Time US1AFL - US1GFL US1JFL - US1MFL	t_{rr}	$I_F=0.5A; I_R=1.0A;$ $I_{rr}=0.25A; T_J=25^\circ C$			50 75	nS
Junction Capacitance US1AFL - US1DFL US1GFL US1JFL - US1MFL	C_J	$V_R=4V; f=1MHz; T_J=25^\circ C$		18 12 7.5		pF

Curve Characteristics

Fig. 1 - Forward Current Derating Curve

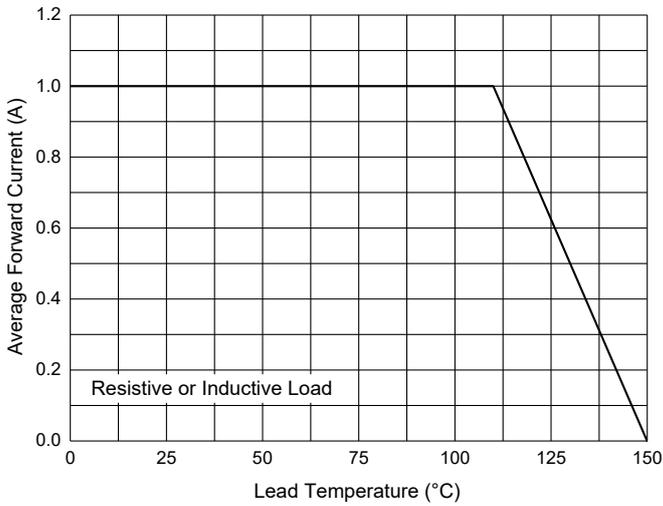


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

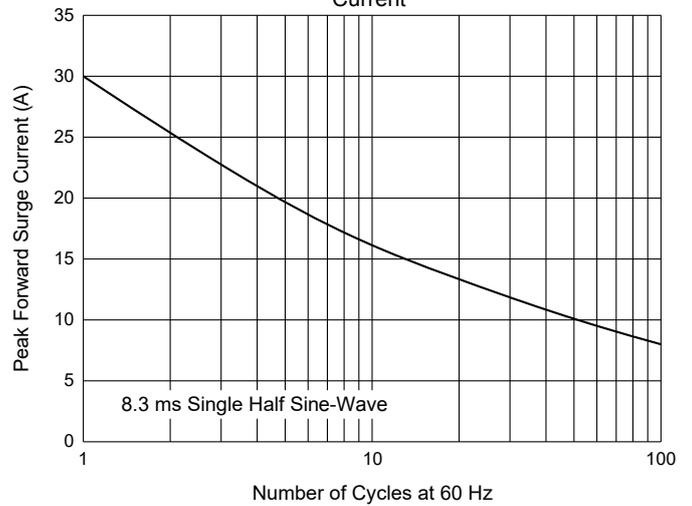


Fig. 3 - Typical Forward Characteristics

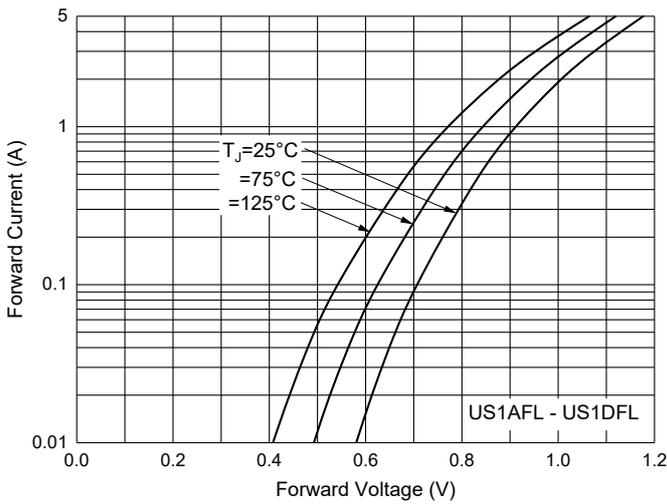


Fig. 4 - Typical Forward Characteristics

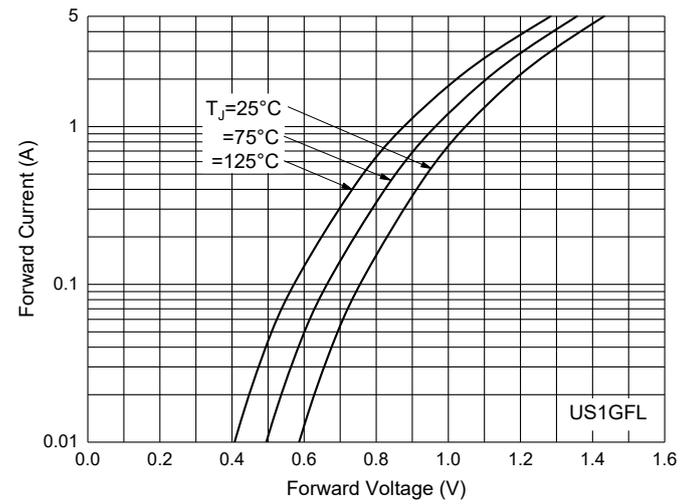


Fig. 5 - Typical Forward Characteristics

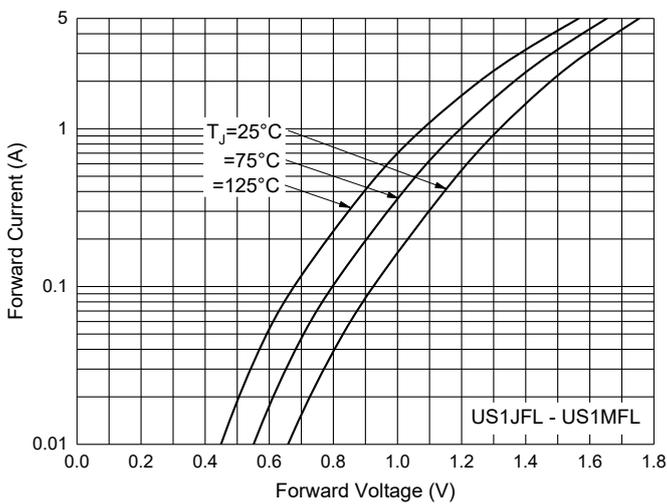
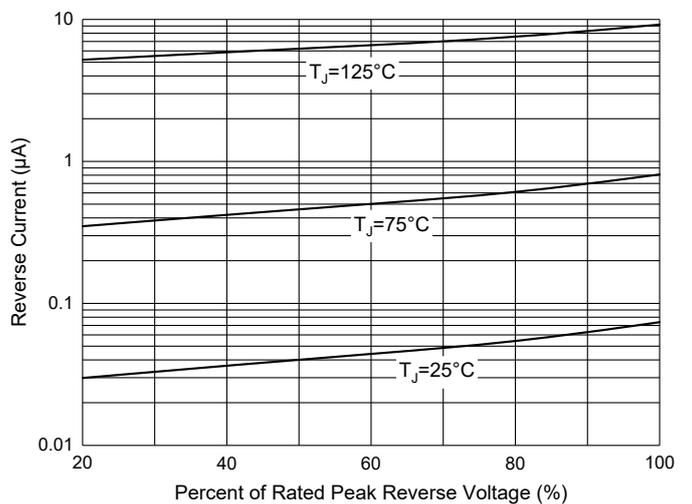
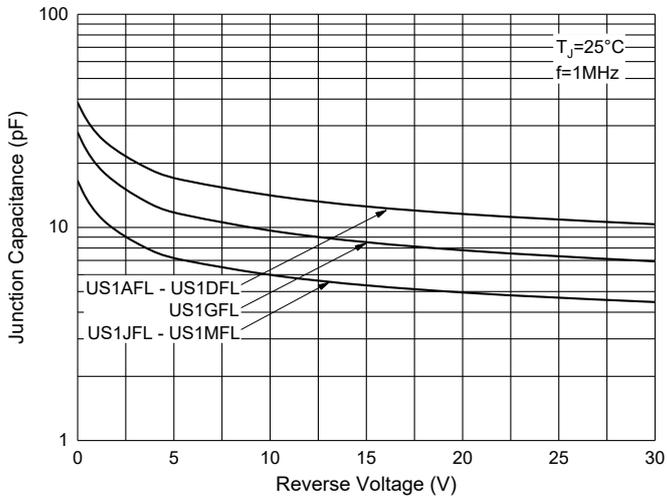


Fig. 6 - Typical Reverse Leakage Characteristics



Curve Characteristics

Fig. 7 - Typical Capacitance Characteristics



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:10Kpcs/Reel

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