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US1A THRU US1K

1 Amp Ultra Fast Rectifier 50 to 800 Volts

Features

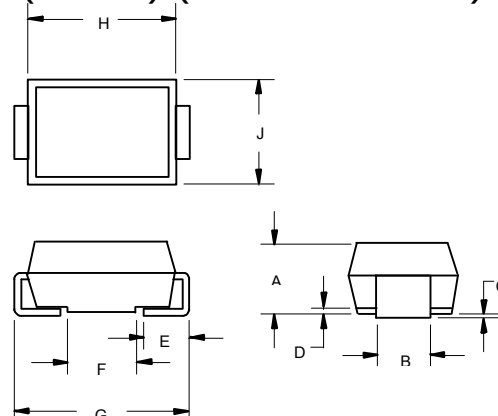
- Glass Passivated Chip
- Ultra Fast Switching For High Efficiency
- For Surface Mounted Applications
- Low Forward Voltage Drop And High Current Capability
- Low Reverse Leakage Current

Maximum Ratings

- Operating Temperature: -50°C to +150°C
- Storage Temperature: -50°C to +150°C
- Maximum Thermal Resistance; 30°C/W Junction To Lead

Catalog Number	Device Marking	Maximum Recurrent Peak Reverse Voltage	Maximum RMS Voltage	Maximum DC Blocking Voltage
US1A	US1A	50V	35V	50V
US1B	US1B	100V	70V	100V
US1C	US1C	150V	105V	150V
US1D	US1D	200V	140V	200V
US1G	US1G	400V	280V	400V
US1J	US1J	600V	420V	600V
US1K	US1K	800V	560V	800V

DO-214AC (SMAJ) (LEAD FRAME)



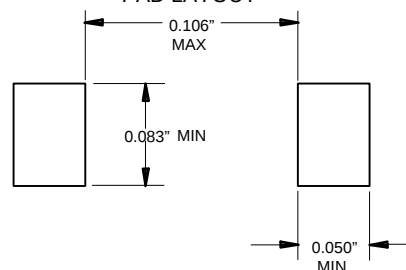
Electrical Characteristics @ 25°C Unless Otherwise Specified

Average Forward Current	$I_{F(AV)}$	1.0A	$T_L = 75^\circ\text{C}$
Peak Forward Surge Current	I_{FSM}	30A	8.3ms, half sine
Maximum Instantaneous Forward Voltage US1A-1D US1G US1J-1K	V_F	1.0V 1.4V 1.7V	$I_{FM} = 1.0A$; $T_J = 25^\circ\text{C}$
Maximum DC Reverse Current At Rated DC Blocking Voltage	I_R	10uA 100uA	$T_A = 25^\circ\text{C}$ $T_A = 100^\circ\text{C}$
Maximum Reverse Recovery Time US1A-1G US1J-1K	T_{rr}	50ns 100ns	$I_F=0.5A$, $I_R=1.0A$, $I_{rr}=0.25A$
Typical Junction Capacitance US1A-1G US1J-1K	C_J	20pF 17pF	Measured at 1.0MHz, $V_R=4.0V$

*Pulse test: Pulse width 300 sec, Duty cycle 1%

DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.079	.096	2.00	2.44	
B	.050	.064	1.27	1.63	
C	.002	.008	.05	.20	
D	---	.02	---	.51	
E	.030	.060	.76	1.52	
F	.065	.091	1.65	2.32	
G	.189	.220	4.80	5.59	
H	.157	.181	4.00	4.60	
J	.090	.115	2.25	2.92	

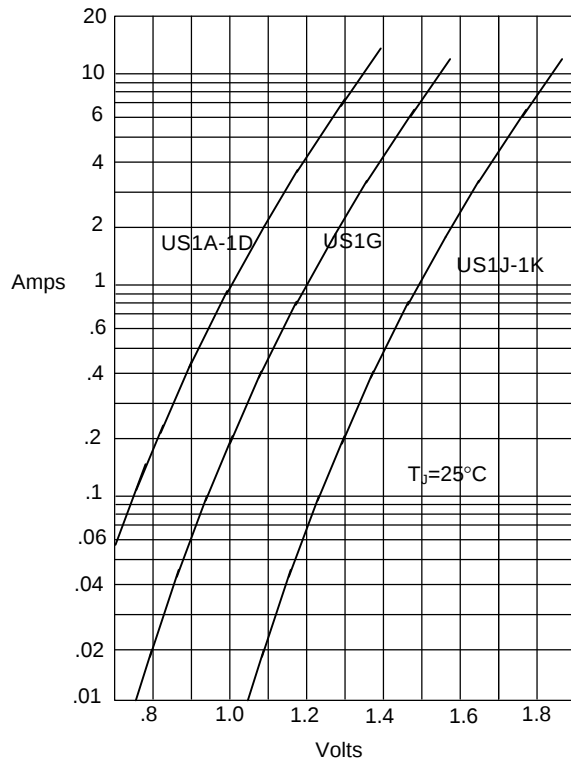
SUGGESTED SOLDER PAD LAYOUT



US1A thru US1K

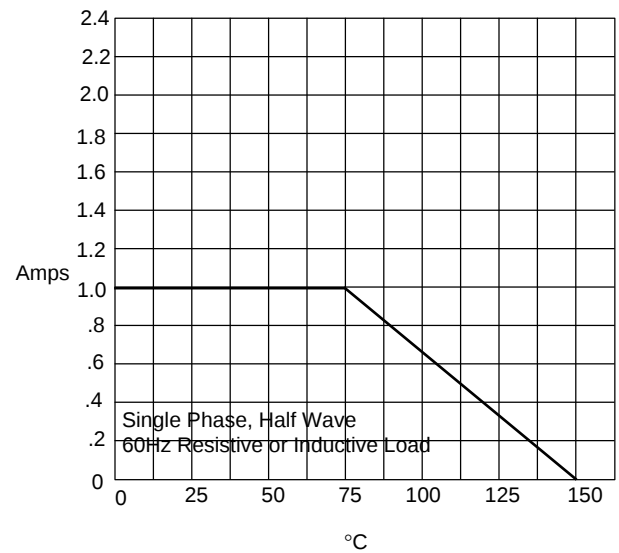


Figure 1
Typical Forward Characteristics



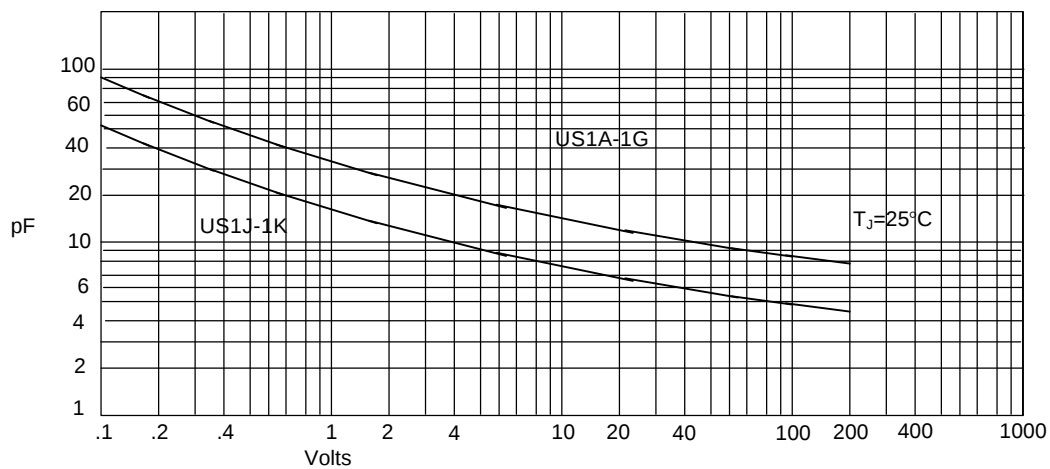
Instantaneous Forward Current - Amperes versus
Instantaneous Forward Voltage - Volts

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

US1A thru US1K

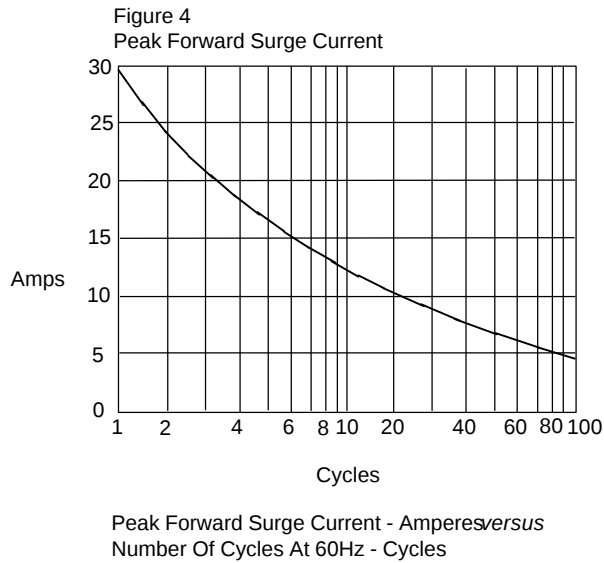
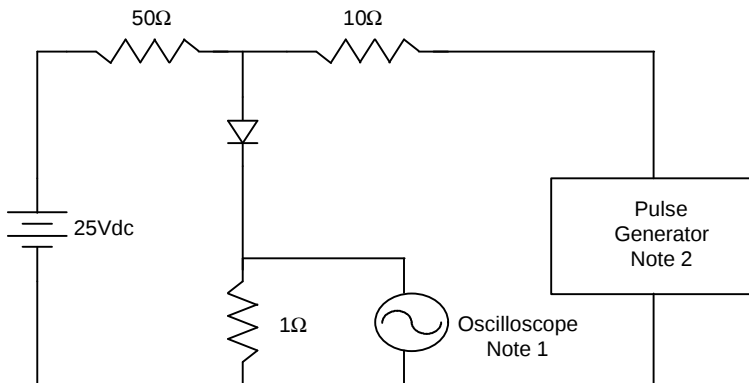


Figure 5
Reverse Recovery Time Characteristic And Test Circuit Diagram



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

