



Micro Commercial Components



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# US2AFL THRU US2MFL

## 2 Amp Ultra Fast Rectifier 50 to 1000 Volts

### Features

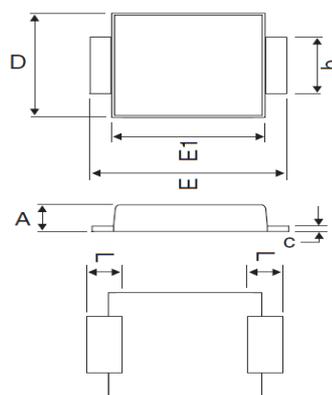
- Halogen free available upon request by adding suffix "-HF"
- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Glass Passivated Chip
- Ultra Fast Switching For High Efficiency
- For Surface Mounted Applications
- Low Forward Voltage Drop And High Current Capability
- Low Reverse Leakage Current
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

### Maximum Ratings

- Operating Temperature: -50°C to +150°C
- Storage Temperature: -55°C to +150°C
- Maximum Thermal Resistance; 20°C/W Junction To Lead

MCC Catalog Number	Device Marking	Maximum Recurrent Peak Reverse Voltage	Maximum RMS Voltage	Maximum DC Blocking Voltage
US2AFL	US2A	50V	35V	50V
US2BFL	US2B	100V	70V	100V
US2CFL	US2C	150V	105V	150V
US2DFL	US2D	200V	140V	200V
US2GFL	US2G	400V	280V	400V
US2JFL	US2J	600V	420V	600V
US2KFL	US2K	800V	560V	800V
US2MFL	US2M	1000V	700V	1000V

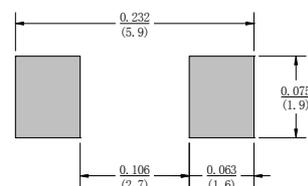
### DO-221AC (SMA-FL)



#### DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.035	.047	0.90	1.20	
b	.049	.065	1.25	1.65	
C	.004	.016	0.10	0.40	
D	.089	.116	2.25	2.95	
E	.173	.220	4.40	5.60	
E1	.126	.181	3.20	4.60	
L	.028	.059	0.70	1.50	

#### SUGGESTED SOLDER PAD LAYOUT



### Electrical Characteristics @ 25°C Unless Otherwise Specified

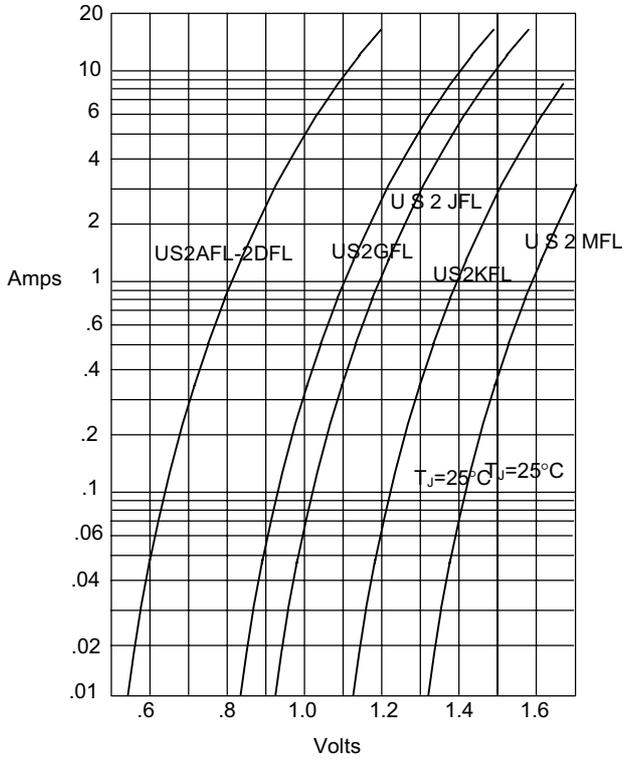
Average Forward Current	$I_{F(AV)}$	2.0A	$T_L = 110^\circ\text{C}$
Peak Forward Surge Current	$I_{FSM}$	50A	8.3ms, half sine
Maximum Instantaneous Forward Voltage US2AFL-2DFL US2GFL US2JFL-2MFL	$V_F$	1.0V 1.4V 1.7V	$I_{FM} = 1.0\text{A};$ $T_J = 25^\circ\text{C}$
Maximum DC Reverse Current At Rated DC Blocking Voltage	$I_R$	5μA 350μA	$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$
Maximum Reverse Recovery Time US2AFL-US2GFL US2JFL-US2MFL	$T_{rr}$	50ns 75ns	$I_F=0.5\text{A}, I_R=1.0\text{A},$ $I_{rr}=0.25\text{A}$
Typical Junction Capacitance	$C_J$	28pF	Measured at 1.0MHz, $V_R=4.0\text{V}$

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

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

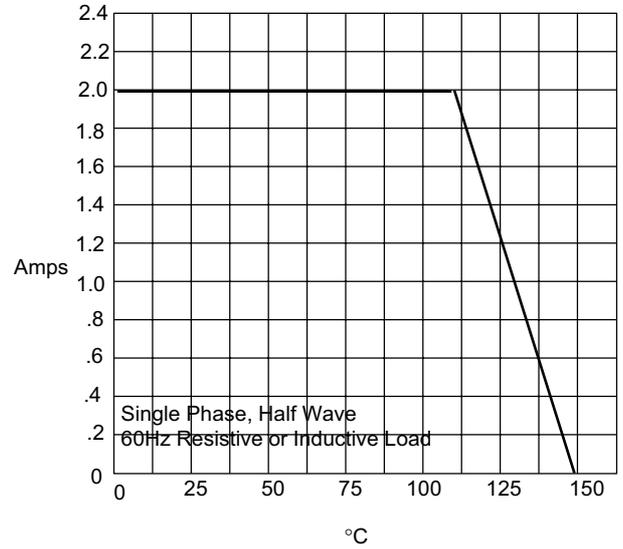
# US2AFL thru US2MFL

Figure 1  
Typical Forward Characteristics



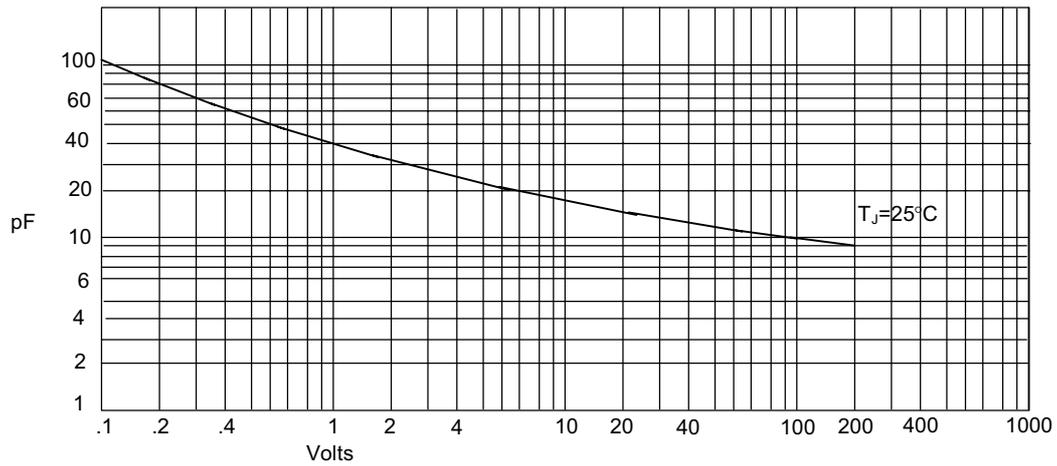
Instantaneous Forward Current - Amperes versus  
Instantaneous Forward Voltage - Volts

Figure 2  
Forward Derating Curve



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

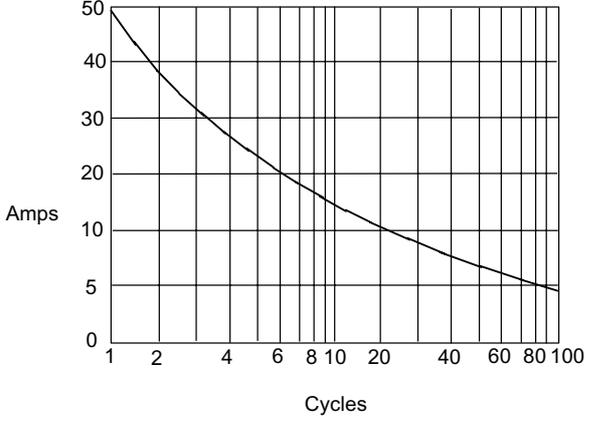
Figure 3  
Junction Capacitance



Junction Capacitance - pF versus  
Reverse Voltage - Volts

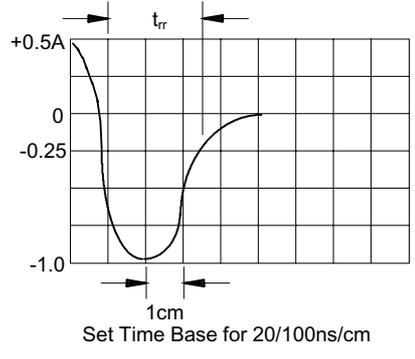
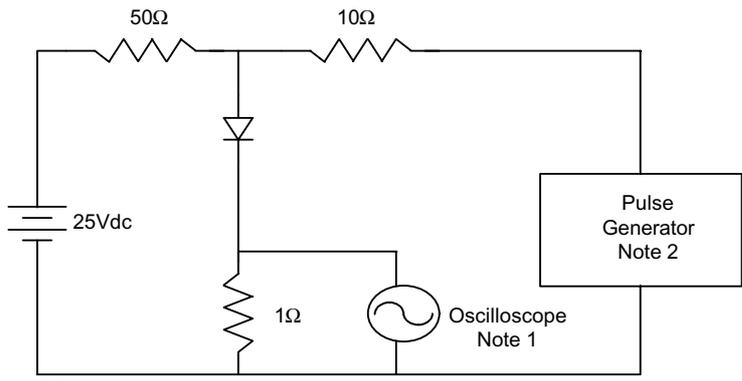
# US2AFL thru US2MFL

Figure 4  
Peak Forward Surge Current



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

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



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Ordering Information :

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

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

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