



# Direct Channel Worldwide Corp.

8F., No. 14, San Ming Rd., Shindian City, Taipei County 231,  
Taiwan (R.O.C)  
T: 886 2 8911 3828 F: 886 2 8911 3829

## ER3A THRU ER3M

### Features

- Lead Free Finish/Rohs Compliant (Note1) ("P" Suffix designates Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Easy Pick And Place
- High Temp Soldering: 260°C for 10 Seconds At Terminals
- Super Fast Recovery Times For High Efficiency
- Halogen free available upon request by adding suffix "-HF"

### Maximum Ratings

- Operating Temperature: -50°C to +175°C
- Storage Temperature: -50°C to +175°C
- Typical Thermal Resistance; 16°C/W Junction To Lead

Catalog Number	Device Marking	Maximum Recurrent Peak Reverse Voltage	Maximum RMS Voltage	Maximum DC Blocking Voltage
ER3A	ER3A	50V	35V	50V
ER3B	ER3B	100V	70V	100V
ER3C	ER3C	150V	105V	150V
ER3D	ER3D	200V	140V	200V
ER3G	ER3G	400V	280V	400V
ER3J	ER3J	600V	420V	600V
ER3K	ER3K	800V	560V	800V
ER3M	ER3M	1000V	700V	1000V

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

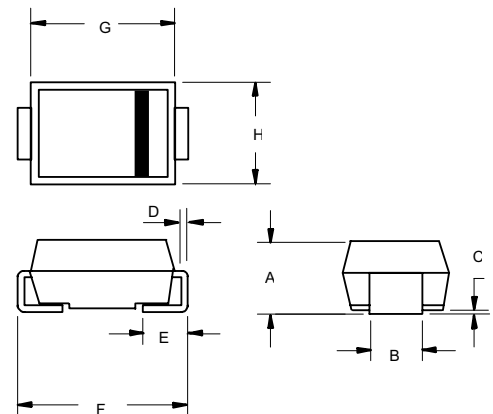
Average Forward Current	$I_{F(AV)}$	3.0A	$T_L = 75^\circ\text{C}$
Peak Forward Surge Current	$I_{FSM}$	100A	8.3ms, half sine
Maximum Instantaneous Forward Voltage ER3A-3D ER3G ER3J~3M	$V_F$	.95V 1.25V 1.70V	$I_{FM} = 3.0A;$ $T_J = 25^\circ\text{C}^*$
Maximum DC Reverse Current At Rated DC Blocking Voltage	$I_R$	5 $\mu$ A 200 $\mu$ A	$T_J = 25^\circ\text{C}$ $T_J = 100^\circ\text{C}$
Maximum Reverse Recovery Time ER3A~ER3J ER3K~ER3M	$T_{rr}$	35ns 75ns	$I_F=0.5A, I_R=1.0A,$ $I_{rr}=0.25A$
Typical Junction Capacitance	$C_J$	45pF	Measured at 1.0MHz, $V_R=4.0V$

\*Pulse test: Pulse width 300  $\mu$ sec, Duty cycle 2%

1. High Temperature Solder Exemptions Applied, see EU Directive Annex 7.

## 3 Amp Super Fast Recovery Silicon Rectifier 50 to 1000 Volts

### DO-214AB (SMC) (LEAD FRAME)



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	.079	.103	2.00	2.62	
B	.108	.128	2.75	3.25	
C	.002	.008	0.051	0.203	
D	.006	.012	0.152	0.305	
E	.030	.060	0.76	1.52	
F	.305	.320	7.75	8.13	
G	.260	.280	6.60	7.11	
H	.220	.245	5.59	6.22	

### SUGGESTED SOLDER PAD LAYOUT

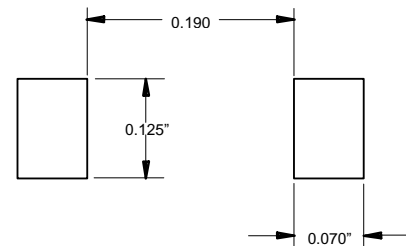
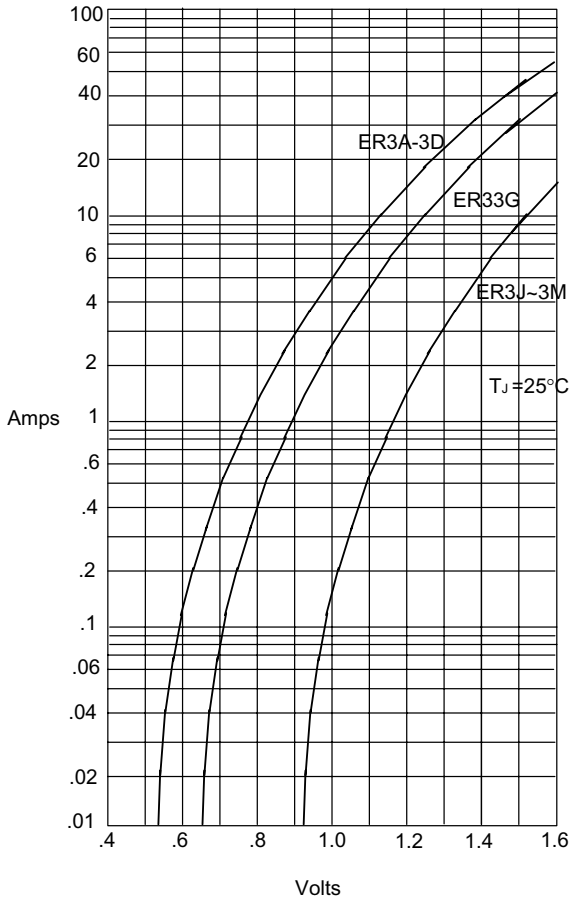


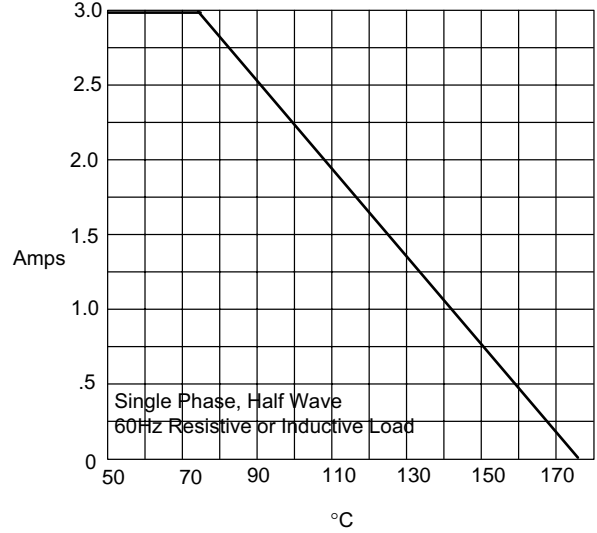


Figure 1  
Typical Forward Characteristics



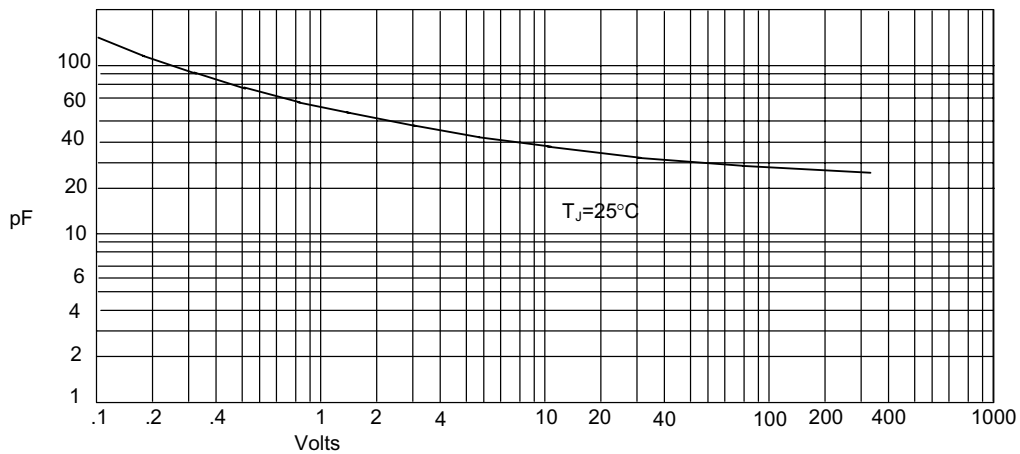
Instantaneous Forward Current - Amperes versus  
Instantaneous Forward Voltage - Volts

Figure 2  
Forward Derating Curve



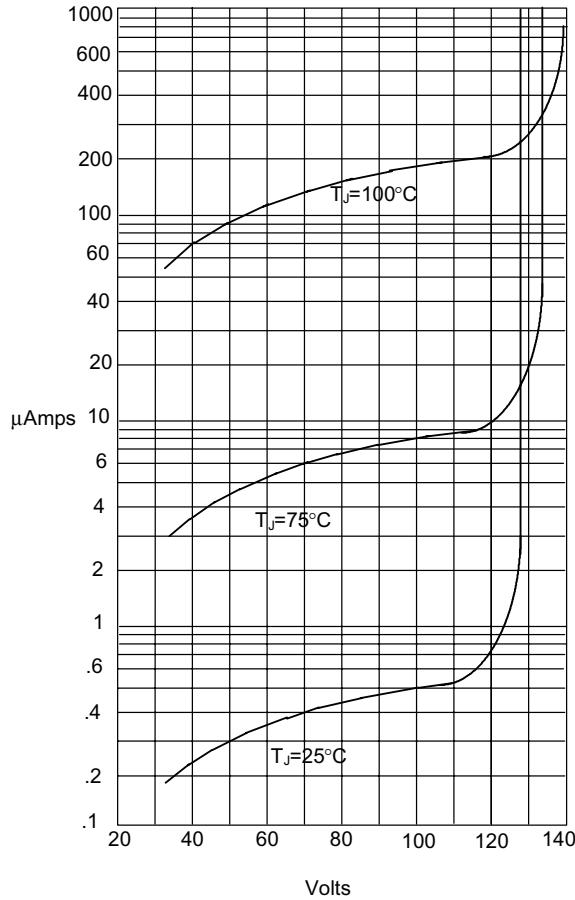
Average Forward Rectified Current - Amperes versus  
Lead Temperature -  $^\circ\text{C}$

Figure 3  
Typical Junction Capacitance



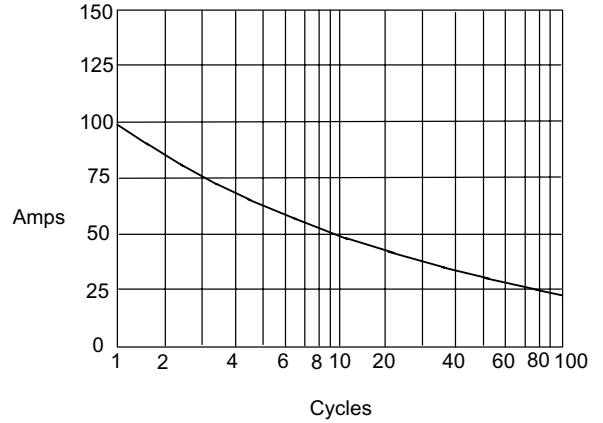
Junction Capacitance - pF versus  
Reverse Voltage - Volts

Figure 4  
Typical Reverse Characteristics



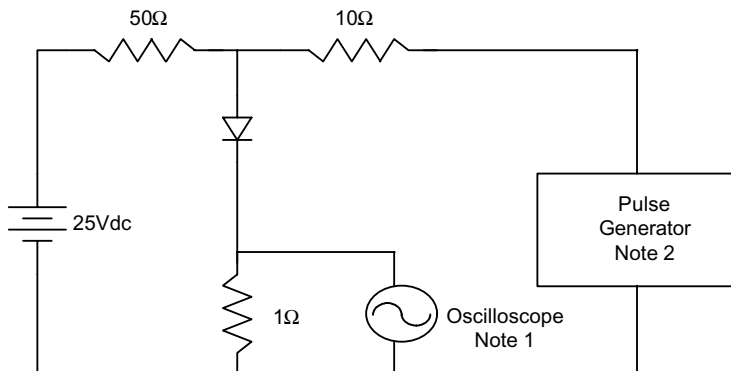
Instantaneous Reverse Leakage Current - MicroAmperes versus  
Percent Of Rated Peak Reverse Voltage - Volts

Figure 5  
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

