



# ES3A THRU ES3J

## Features

- For Surface Mount Applications
- Extremely Low Thermal Resistance
- Easy Pick And Place
- High Temp Soldering: 250 °C for 10 Seconds At Terminals
- Super Fast Recovery Times For High Efficiency

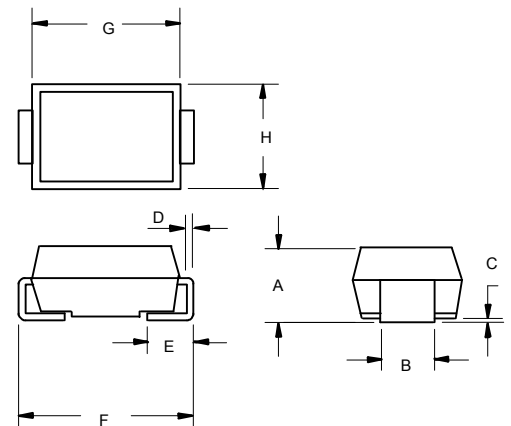
## 3 Amp Super Fast Recovery Silicon Rectifier 50 to 600 Volts

## Maximum Ratings

- Operating Temperature: -50°C to +150°C
- Storage Temperature: -50°C to +150°C
- Maximum Thermal Resistance; 16 °C/W Junction To Lead

MCC Catalog Number	Device Marking	Maximum Recurrent Peak Reverse Voltage	Maximum RMS Voltage	Maximum DC Blocking Voltage
ES3A	ES3A	50V	35V	50V
ES3B	ES3B	100V	70V	100V
ES3C	ES3C	150V	105V	150V
ES3D	ES3D	200V	140V	200V
ES3G	ES3G	400V	280V	400V
ES3J	ES3J	600V	420V	600V

## DO-214AB (SMC)

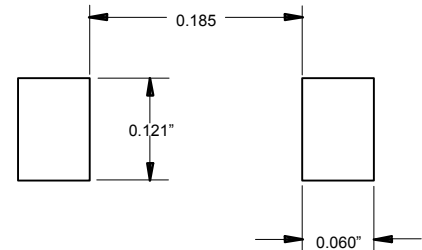


## Electrical Characteristics @ 25°C Unless Otherwise Specified

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 ES3A-3D ES3G ES3J	$V_F$	.95V 1.25V 1.70V	$I_{FM} = 3.0\text{A};$ $T_J = 25^\circ\text{C}$
Maximum DC Reverse Current At Rated DC Blocking Voltage	$I_R$	5 $\mu\text{A}$ 200 $\mu\text{A}$	$T_J = 25^\circ\text{C}$ $T_J = 100^\circ\text{C}$
Maximum Reverse Recovery Time	$T_{rr}$	35ns	$I_F=0.5\text{A}, I_R=1.0\text{A},$ $I_{rr}=0.25\text{A}$
Typical Junction Capacitance	$C_J$	45pF	Measured at 1.0MHz, $V_R=4.0\text{V}$

DIM	INCHES		MM		NOTE
	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	1.27	
F	.305	.320	7.75	8.13	
G	.260	.280	6.60	7.11	
H	.220	.245	5.59	6.22	

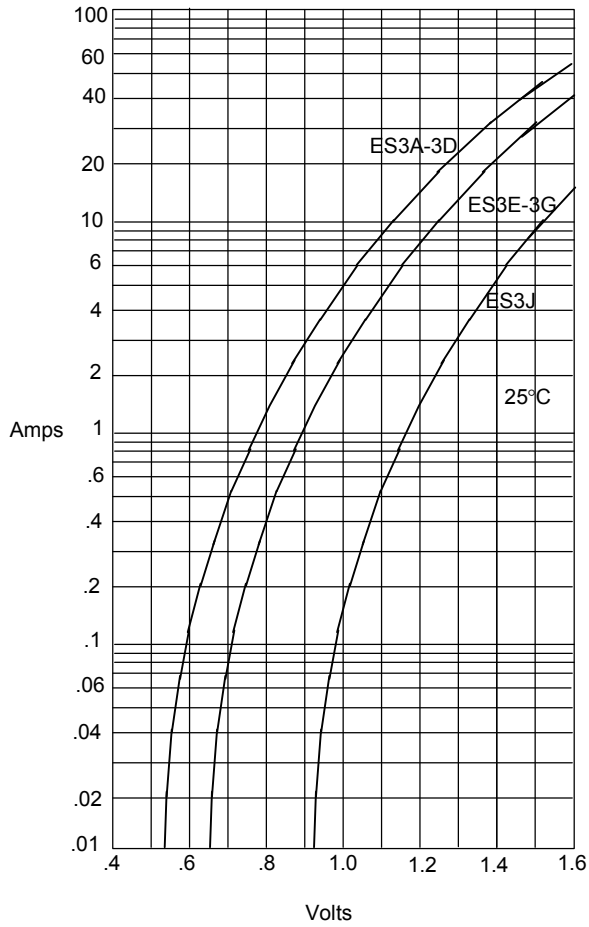
### SUGGESTED SOLDER PAD LAYOUT



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

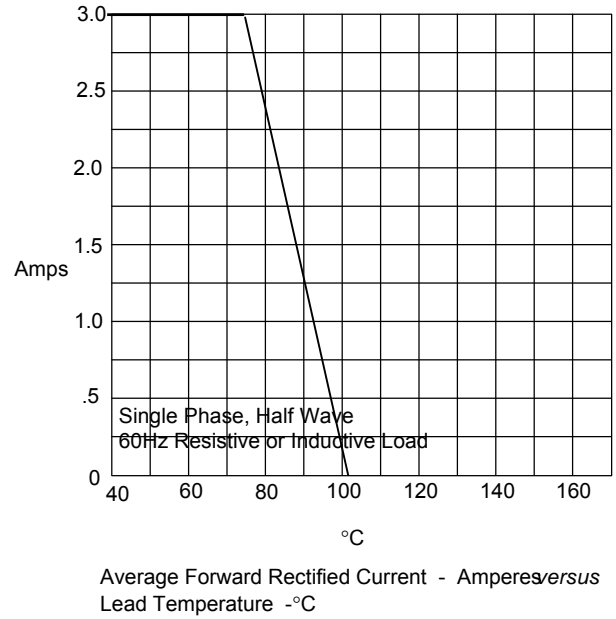
# ES3A thru ES3J

Figure 1  
Typical Forward Characteristics



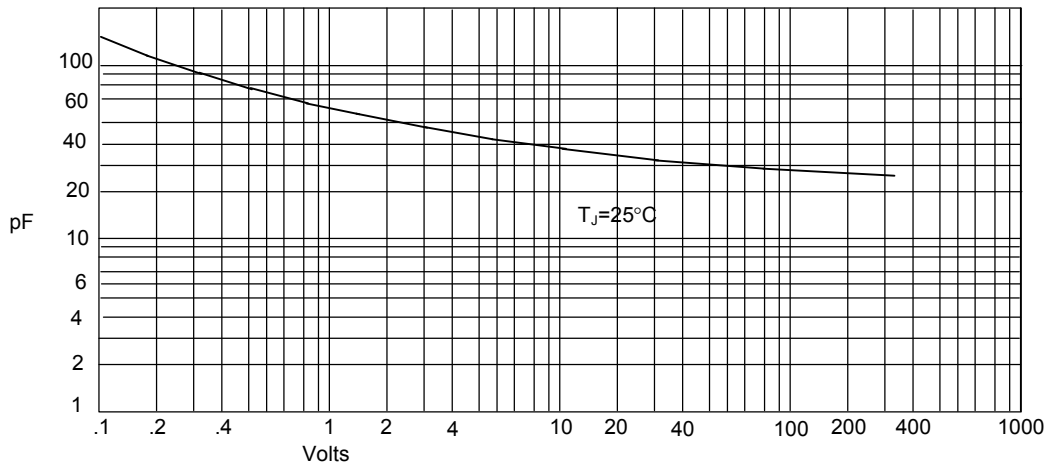
Instantaneous Forward Current - Amperes *versus*  
Instantaneous Forward Voltage - Volts

Figure 2  
Forward Derating Curve



Average Forward Rectified Current - Amperes *versus*  
Lead Temperature - °C

Figure 3  
Junction Capacitance

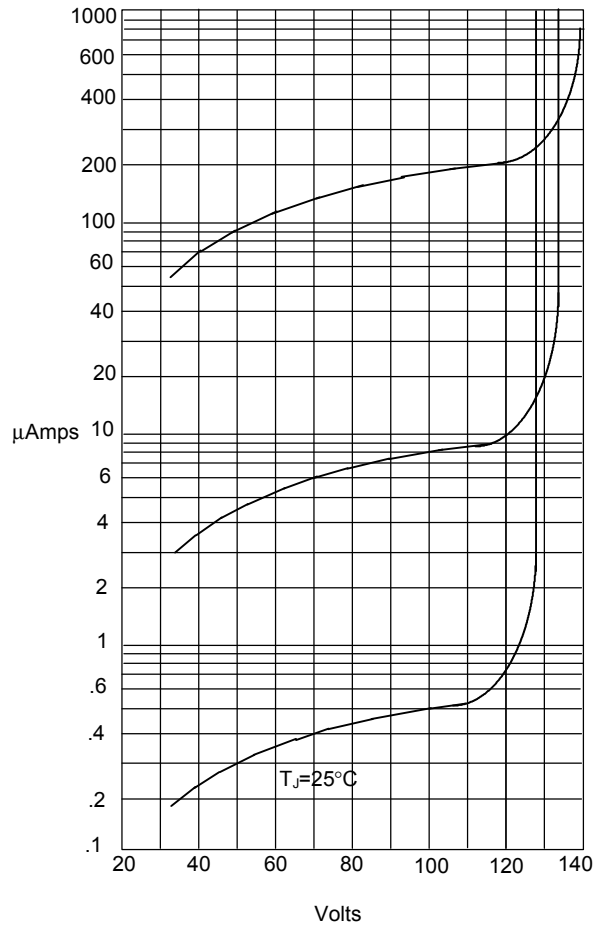


Junction Capacitance - pF *versus*  
Reverse Voltage - Volts

# ES3A thru ES3J

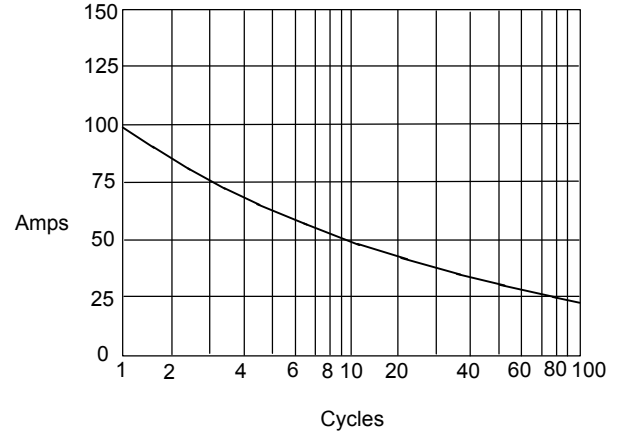


Figure 4  
Typical Reverse Characteristics



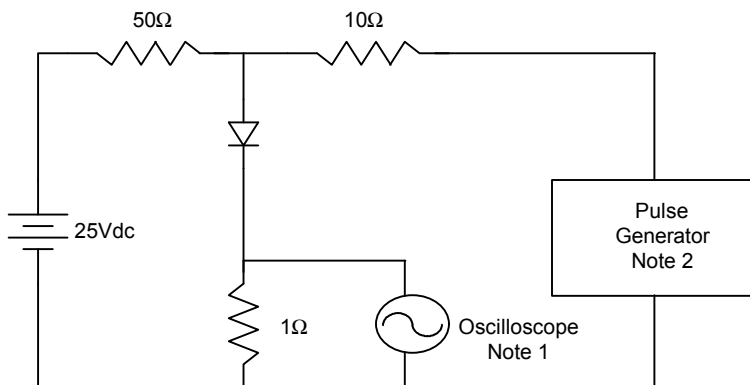
Instantaneous Reverse Leakage Current - MicroAmperes versus  
Percent Of Rated Peak Reverse Voltage - Volts

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

