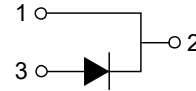




## Silicon Carbide Power Schottky Diode



TO-220AC



### Features

- Zero Reverse Recovery Current
- Zero Forward Recovery Voltage
- Temperature Independent Switching
- High Temperature Operation
- High Frequency Operation
- Marking : ESIC10120S

### Benefits

- Unipolar Rectifier
- Substantially Reduced Switching Losses
- No Thermal Run-Away With Parallel Devices
- Reduced Heat Sink Requirements

### Application

- Switch Mode Power Supplies
- Power Factor Correction
- Motor drive, PV Inverter, Wind Power Station

### Ordering Information

Part No.	Remark	Package	Packing
ESIC10120S	RoHS Compliant	TO-220AC	50 / Tube
ESIC10120S-H	Halogen Free		

### Absolute Maximum Ratings ( $T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Conditions	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	$T_C=25^{\circ}\text{C}$	$V_{RRM}$	1200	V
Surge Peak Reverse Voltage	$T_C=25^{\circ}\text{C}$	$V_{RSM}$	1200	V
DC Blocking Voltage	$T_C=25^{\circ}\text{C}$	$V_{DC}$	1200	V
Forward Current	$T_C \leq 25^{\circ}\text{C}$	$I_F$	25.9	A
	$T_C \leq 150^{\circ}\text{C}$		10	
Non-Repetitive Peak Forward Surge Current	$T_C=25^{\circ}\text{C}$ , $t_p=8.3\text{ms}$ , Half Sine Wave	$I_{FSM}$	60	A
Typical Thermal Resistance		$R_{\theta JC}$	1.06	$^{\circ}\text{C/W}$
Operating Junction Temperature		$T_J$	-55~+175	$^{\circ}\text{C}$
Storage Temperature		$T_{STG}$	-55~+175	$^{\circ}\text{C}$



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Electrical Characteristics (  $T_A = 25\text{ }^\circ\text{C}$  unless otherwise specified )

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Forward Voltage	$I_F=10\text{A}, T_J=25^\circ\text{C}$	$V_F$	-	-	1.8	V
	$I_F=10\text{A}, T_J=175^\circ\text{C}$		-	-	3	
Reverse Current	$V_R=1200\text{V}, T_J=25^\circ\text{C}$	$I_R$	-	-	100	$\mu\text{A}$
	$V_R=1200\text{V}, T_J=175^\circ\text{C}$		-	-	200	
Total Capacitive Charge	$V_R=800\text{V}, I_F=10\text{A}, di/dt=200\text{A}/\mu\text{s}, T_J=25^\circ\text{C}$	$Q_C$	-	56.5	-	nC
Total Capacitance	$V_R=0\text{V}, T_J=25^\circ\text{C}, f=1\text{MHz}$	$C$	-	772	-	pF

Rating and Characteristics Curves

FIG. 1-Forward Characteristics

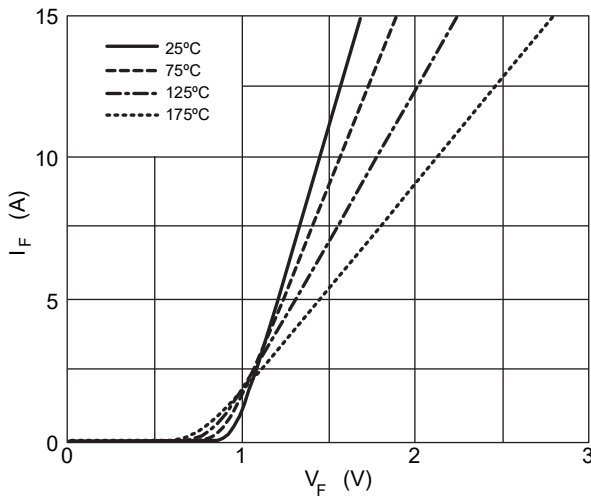


FIG. 2-Reverse Characteristics

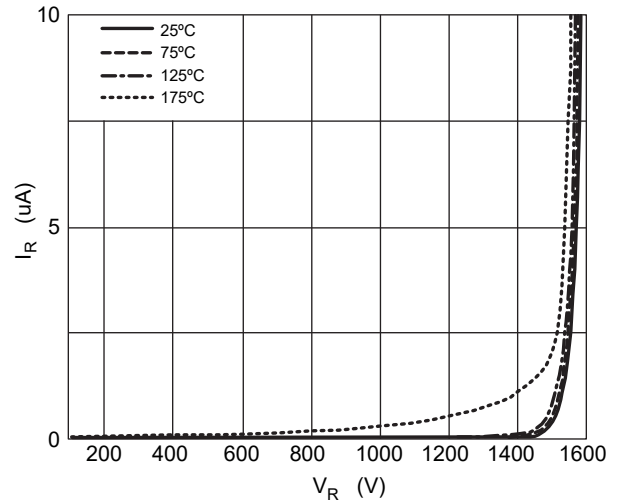
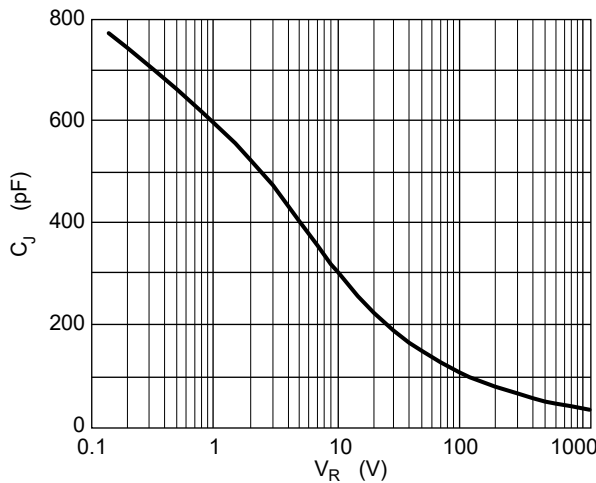
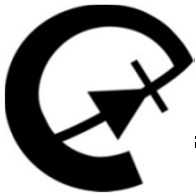


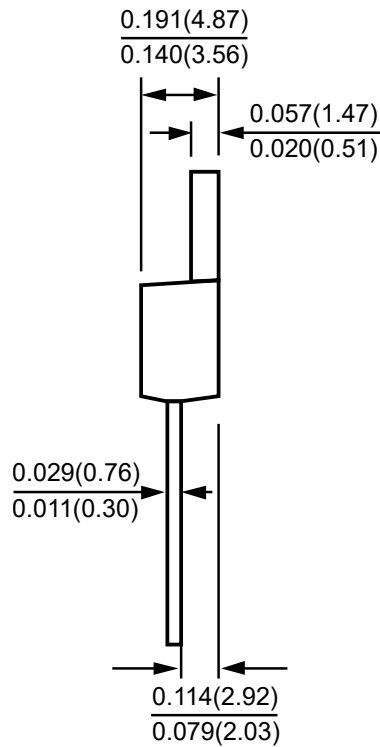
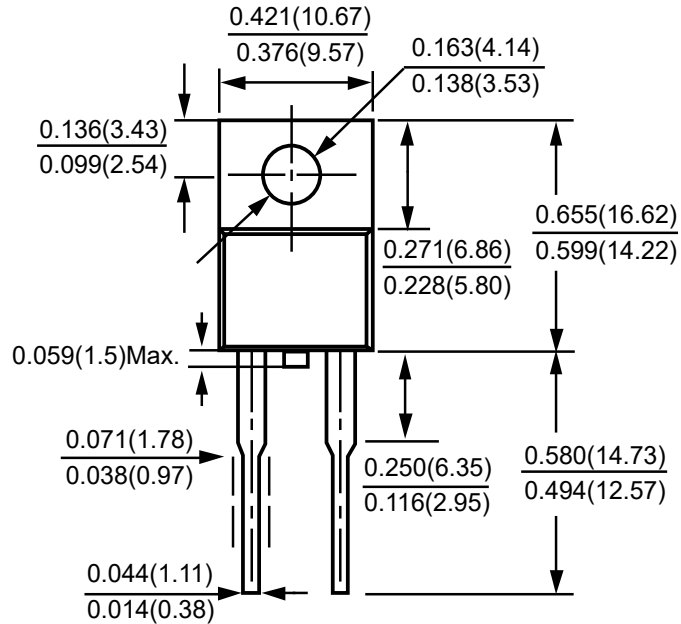
FIG. 3-Capacitance vs. Reverse Voltage





Silicon Carbide Power Schottky Diode

Package Outline Dimensions



TO-220AC

Dimensions in inches and (millimeters)



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