

Silicon Carbide Schottky Diode

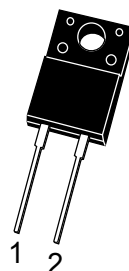
Feature

- High surge current capability
- No reverse recovery
- Positive Temperature Coefficient
- Easy to paralleling
- Halogen-free / RoHS compliant

V_{RRM}	650V
I_F	16A($T_c=154^{\circ}\text{C}$)
Q_C	48nC

Benefit

- High-speed switching
- Low heat dissipation requirements
- Reduce size and cost of the system
- High-reliability
- System efficiency improvement



Package: ITO-220AC

ECRF1665A-HF

HF=Halogen Free

Application

- Solar inverter
- Power factor correction
- Data Center
- Switch mode power supply

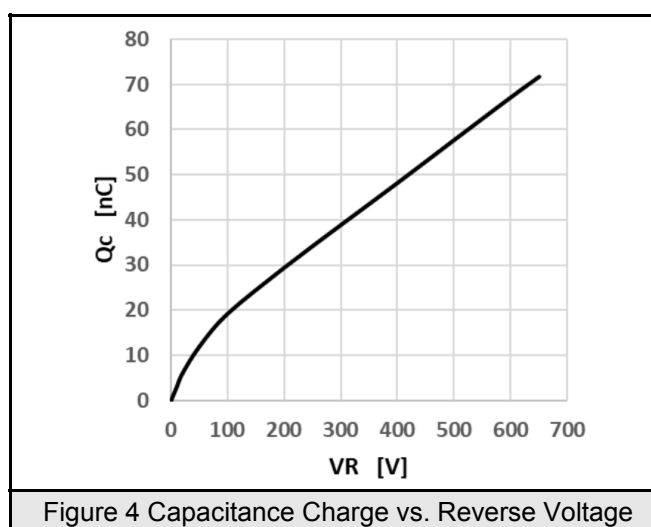
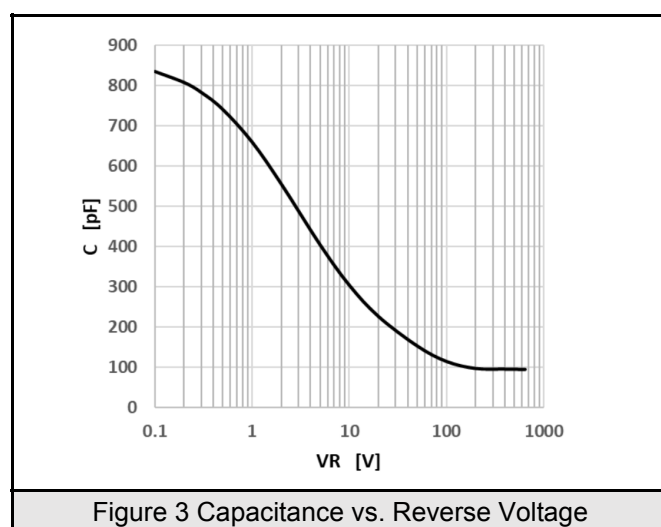
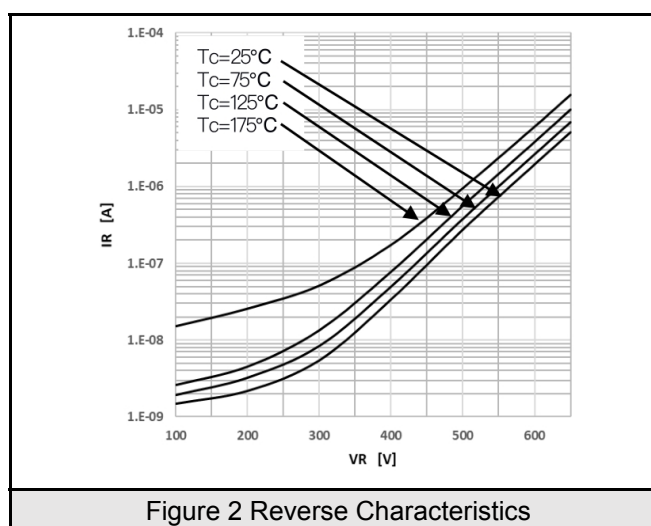
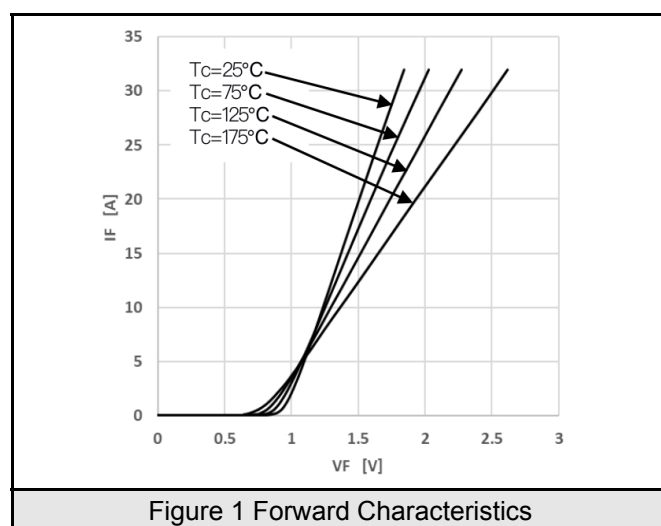
Absolute Maximum Ratings ($T_c=25^{\circ}\text{C}$)

Symbol	Parameter	Data	Unit
V_{RRM}	Repetitive Peak Reverse Voltage	650	V
I_F	Continuous Forward Current	$T_c=25^{\circ}\text{C}$	51 A
		$T_c=135^{\circ}\text{C}$	24 A
		$T_c=154^{\circ}\text{C}$	16 A
I_{FSM}	Non-Repetitive Forward Surge Current	$T_c=25^{\circ}\text{C}, T_p=10\text{mS}, \text{Half Sine Pulse}$	120 A
		$T_c=110^{\circ}\text{C}, T_p=10\text{mS}, \text{Half Sine Pulse}$	100 A
I_{FRM}	Repetitive Peak Forward Surge Current	$T_c=25^{\circ}\text{C}, T_p=10\text{mS}, \text{Half Sine Pulse}$	103 A
$\int i^2 dt$	$i^2 t$ value	$T_c=25^{\circ}\text{C}, T_p=10\text{ms}$	72 A^2S
		$T_c=110^{\circ}\text{C}, T_p=10\text{ms}$	50 A^2S
P_{tot}	Power Dissipation	$T_c=25^{\circ}\text{C}$	214 W
		$T_c=110^{\circ}\text{C}$	93 W
		$T_c=150^{\circ}\text{C}$	36 W
T_J	Operating Junction Temperature	-55~175	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	-55~175	$^{\circ}\text{C}$
$R_{\theta JC}$	Thermal Resistance Junction to Case (per leg)	0.7 (Typ)	$^{\circ}\text{C/W}$

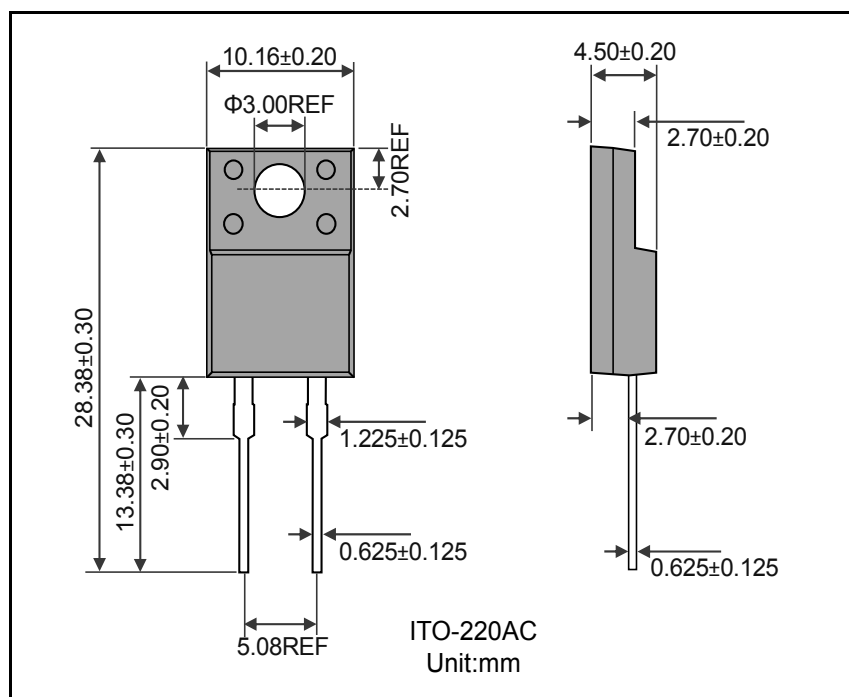
Electricity Character Per Diode ($T_c=25^\circ\text{C}$)

Item	Test Condition		Value(min)	Value(typ)	Value(max)	Unit
V_B	—	$T_c=25^\circ\text{C}$	650	—	—	V
V_F	$I_F=16\text{A}$	$T_c=25^\circ\text{C}$	—	1.43	1.6	V
		$T_c=175^\circ\text{C}$	—	1.72	—	V
I_R	$V_R=650\text{V}$	$T_c=25^\circ\text{C}$	—	7	100	μA
		$T_c=175^\circ\text{C}$	—	15	—	μA
C	$f=1\text{MHz}$	$V_R=1\text{V}$	—	659	—	pF
		$V_R=200\text{V}$	—	96	—	pF
		$V_R=400\text{V}$	—	95	—	pF
Q_C	$V_R=400\text{V}$		—	48	—	nC
E_C	$V_R=400\text{V}$		—	8	—	μJ

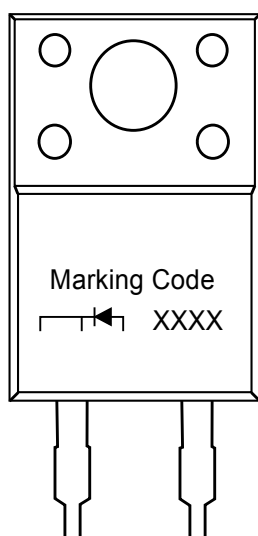
Electrical Characteristic Curves



Package Outline Dimensions



Marking Information



“Marking Code”= The Following

“XXXX”= Date Code Marking

Marking Code	Part Number
ECRF1665A	ECRF1665A-HF

Packing Information

Packaging	Part Number	Quantity(pcs)	Size(mm)
Tube	Tube	50	L534×W33×H7
	Inner Box	1000	L560×W150×H40
	Outer Box	5000	L570×W235×H175