MHCHXM®

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ECR3065A

Silicon Carbide Schottky Diode

V_{RRM}	650V
I_F	30A(Tc=148°C)
Q_C	87nC

RoHS Reach

■ Features

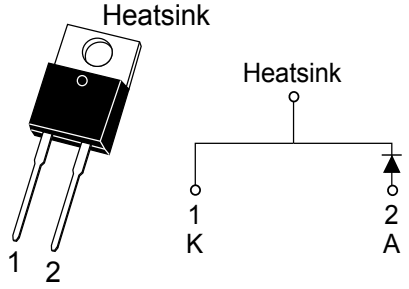
- High surge current capability
- No reverse recovery
- Positive Temperature Coefficient
- Easy to paralleling
- Halogen-free / RoHS compliant
- Compliance with EU REACH

■ Benefits

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

■ Applications

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



Package:TO-220AC-A

ECR3065A-HF

HF=Halogen Free

Absolute Maximum Ratings (Tc=25°C)

Symbol	Parameter		Data	Unit
V_{RRM}	Repetitisve Peak Reverse Voltage		650	V
I_F	Continuous Forward Current	Tc=25°C	80	A
		Tc=135°C	38	A
		Tc=148°C	30	A
I_{FSM}	Non-Repetitive Forward Surge Current	Tc=25°C,Tp=10mS,Half Sine Pulse	234	A
I_{FRM}	Repetitive Peak Forward Surge Current	Tc=25°C,Tp=10mS,Half Sine Pulse	205	A
$\int i^2dt$	i^2t value	Tc=25°C,Tp=10ms	273	A^2S
		Tc=110°C,Tp=10ms	216	A^2S
P_{tot}	Power Dissipation	Tc=25°C	310	W
		Tc=110°C	134	W
		Tc=150°C	52	W
T_J	Operating Junction Temperature		-55～175	°C
T_{STG}	Storage Temperature		-55～175	°C
$R_{\theta JC}$	Thermal Resistance Junction to Case (per leg)		TYP:0.483	°C/W

Electricity Character Per Diode (Tc=25°C)

Item	Test Condition		Value(min)	Value(typ)	Value(max)	Unit
V_B	—	Tc=25°C	650	—	—	V
V_F	IF=30A	Tc=25°C	—	1.42	1.6	V
		Tc=175°C	—	1.8	—	V
I_R	VR=650V	Tc=25°C	—	7	100	uA
		Tc=175°C	—	21	—	uA
C	f=1MHZ	VR=1V	—	1233	—	pF
		VR=200V	—	167	—	pF
		VR=400V	—	164	—	pF
Q_C	VR=400V		—	87	—	nC
E_C	VR=400V		—	14	—	uJ

Electrical Characteristic Curves

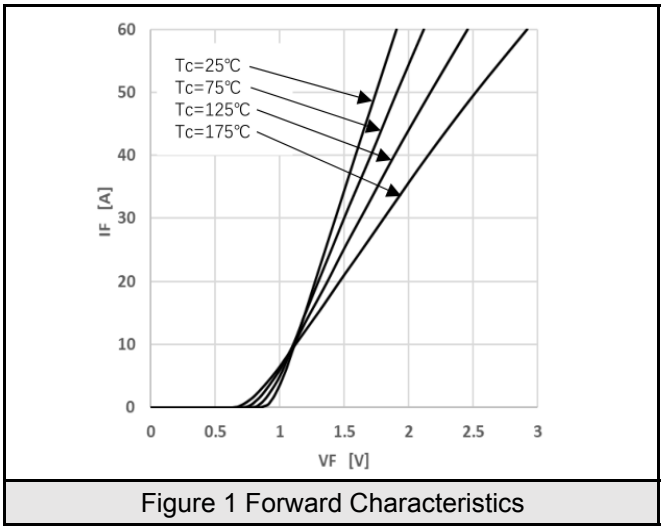


Figure 1 Forward Characteristics

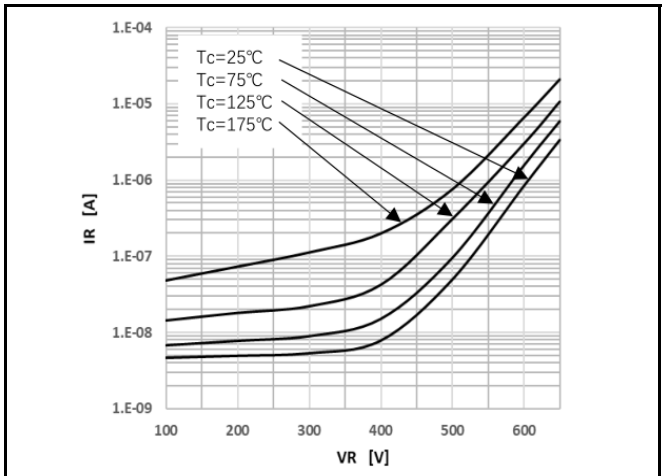


Figure 2 Reverse Characteristics

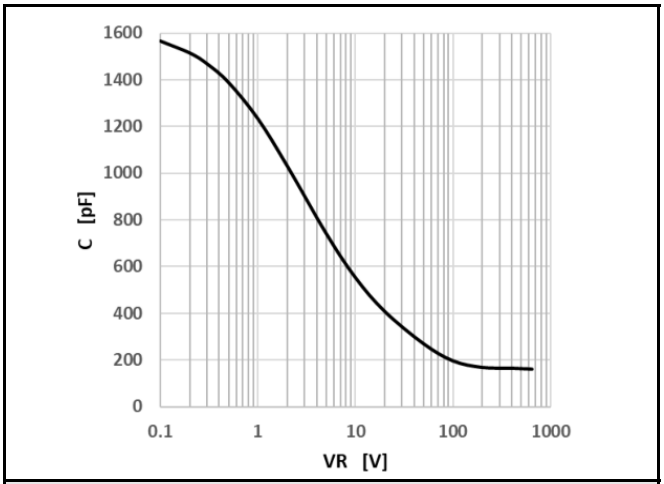


Figure 3 Capacitance vs. Reverse Voltage

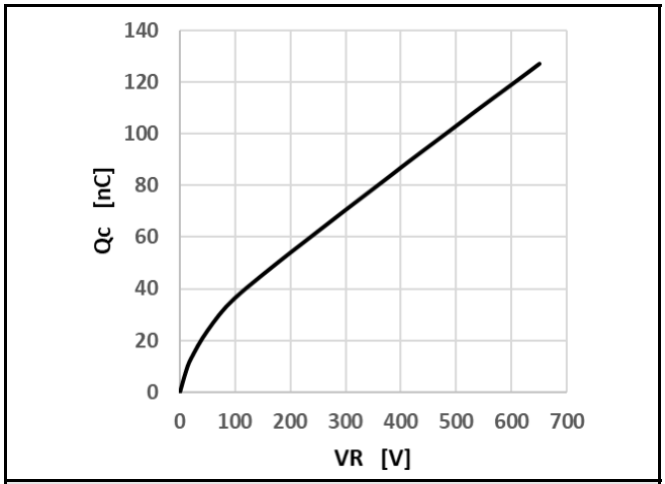
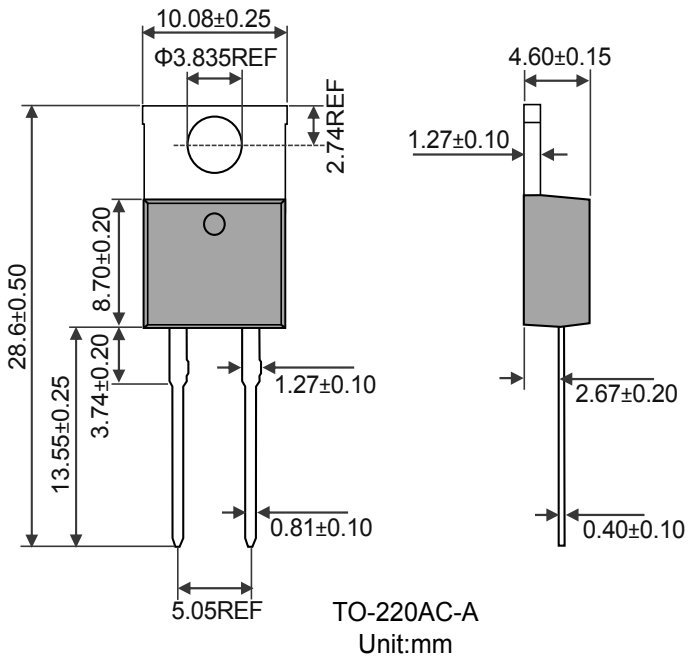


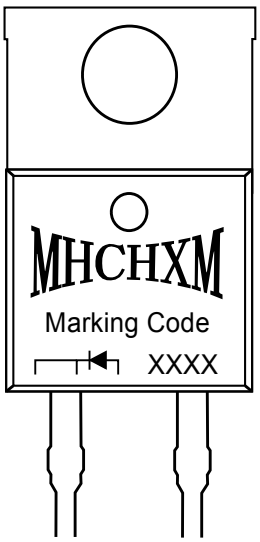
Figure 4 Capacitance Charge vs. Reverse Voltage

Package Outline Dimensions



TO-220AC-A
Unit:mm

Marking Information



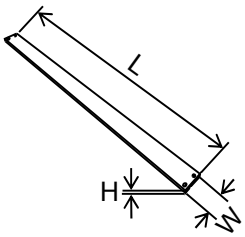
"MHCHXM"= Product Logo
"Marking Code"= The Following
"XXXX"= Date Code Marking

Marking Code	Part Number
ECR3065A	ECR3065A-HF

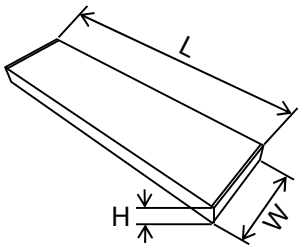
Packing Information

Packaging	Part Number	Quantity(pcs)	Size(mm)
Tube	Tube	50	L534×W33×H7
	Inner Box	1000	L560×W150×H40
	Outer Box	5000	L580×W235×H175

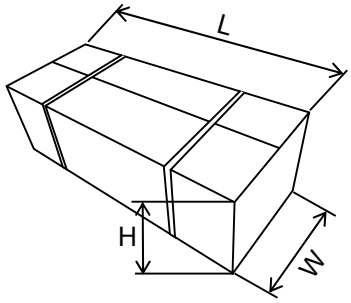
Packaging:Tube



Tube



Tube Inner Box



Tube Outer Box

Notes

Lead Forming

1.During lead frame bending, the lead frame should be bent at a distance more than 3mm from bottom of the epoxy.And the bending degree should not exceed 90°.
Note: The lead frame must be secured and do not touch the epoxy before bending to avoid damage to the transistor.In addition, when using a mold for a large number of lead molding, the structure of the fixed lead must be set, and it should be noted that the lead pressure rod structure cannot exert pressure on the epoxy resin body.

2. Do not bend the lead repeatedly. Do not bend the lead outward

Heat sink mounting

For power devices, in order to reduce junction temperature, heat dissipation blocks are usually used to disperse heat to the outside, and semiconductor power devices installed on the heat dissipation blocks can effectively dissipate heat without losing the reliability of the semiconductor, so the following matters should be noted when using:

1. Pay attention to the selection of silicone cream
In order to improve the thermal conductivity and heat dissipation effect of the device and the heat dissipation block, generally apply a thin layer of silicone grease evenly on the contact surface of the device and the heat dissipation block. Choose a silicone grease with low oil separation degree. Do not overapply it, otherwise it will attach too much stress to the resin.

2. Optimum torque is required
When using the fastening torque, pay attention not to use too much torque, so as not to damage the epoxy resin body, pay attention to the smooth cooling block body, no file chips and other foreign bodies between the transistor and the cooling block, pay attention to the selection of screws, nuts, gaskets and washers, so as not to cause damage to the transistor due to improper selection.

Soldering

1. Pay special attention to welding. When welding, the distance between the solder joint and the epoxy ball should be greater than 3mm, and it is recommended to weld it outside the tie rod base.

2. Avoid applying any pressure to the lead frame while the transistor is at high temperatures, especially when welding. Dip welding and manual welding should not be done more than once

Notes:

For specific precautions, please refer to our company's relevant technical documents or visit our official website at **http://www.jshxm.com**

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