

Features

- Zero Reverse Recovery Current
- Zero Forward Recovery Voltage
- Positive Temperature Coefficient on VF
- Temperature-independent Switching
- 175°C Operating Junction Temperature

Benefits

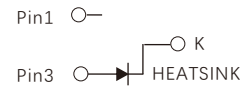
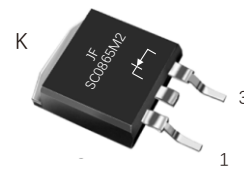
- Replace Bipolar with Unipolar Device
- Reduction of Heat Sink Size
- Parallel Devices Without Thermal Runaway
- Essentially No Switching Losses

Applications

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

TO-252

SC0865M2



V_{RRM}	=	650	V
$I_F (T_C \leq 135^\circ\text{C})$	=	11	A
Q_C	=	22	nC

Maximum Ratings

Symbol	Parameter	Value	Unit	Test Conditions	Note
V_{RRM}	Repetitive Peak Reverse Voltage	650	V	$T_J = 25^\circ\text{C}$	
V_{RSM}	Surge Peak Reverse Voltage	650	V	$T_J = 25^\circ\text{C}$	
V_R	DC Blocking Voltage	650	V	$T_J = 25^\circ\text{C}$	
I_F	Forward Current	24 11 8	A	$T_C \leq 25^\circ\text{C}$ $T_C \leq 135^\circ\text{C}$ $T_C \leq 153^\circ\text{C}$	
I_{FSM}	Non-Repetitive Forward Surge Current	50	A	$T_J = 25^\circ\text{C}$, $t_p = 8.3\text{ms}$, Half Sine Wave	
P_{tot}	Power Dissipation	107	W	$T_J = 25^\circ\text{C}$	Fig.3
T_J, T_{STG}	Operating Junction and Storage Temperature	-55 to 175	$^\circ\text{C}$		

Electrical Characteristics

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
V_F	Forward Voltage	1.4 1.7	1.65 2.3	V	$I_F = 8A, T_J = 25^{\circ}C$ $I_F = 8A, T_J = 175^{\circ}C$	Fig. 1
I_R	Reverse Current	1 5	20 100	μA	$V_R = 650V, T_J = 25^{\circ}C$ $V_R = 650V, T_J = 175^{\circ}C$	Fig. 2
C	Total Capacitance	520 50 41	/	pF	$V_R = 0V, T_J = 25^{\circ}C, f = 1MHz$ $V_R = 200V, T_J = 25^{\circ}C, f = 1MHz$ $V_R = 400V, T_J = 25^{\circ}C, f = 1MHz$	Fig. 5
Q_C	Total Capacitive Charge	22	/	nC	$V_R = 650V, I_F = 8A$ $di/dt = 200A/\mu s, T_J = 25^{\circ}C$	Fig. 4

Thermal Characteristics

Symbol	Parameter	Typ.	Unit	Note
$R_{\theta JC}$	Thermal Resistance from Junction to Case	1.4	$^{\circ}C/W$	Fig. 6
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	80	$^{\circ}C/W$	
T_{solder}	Soldering Temperature	260	$^{\circ}C$	

Typical Performance

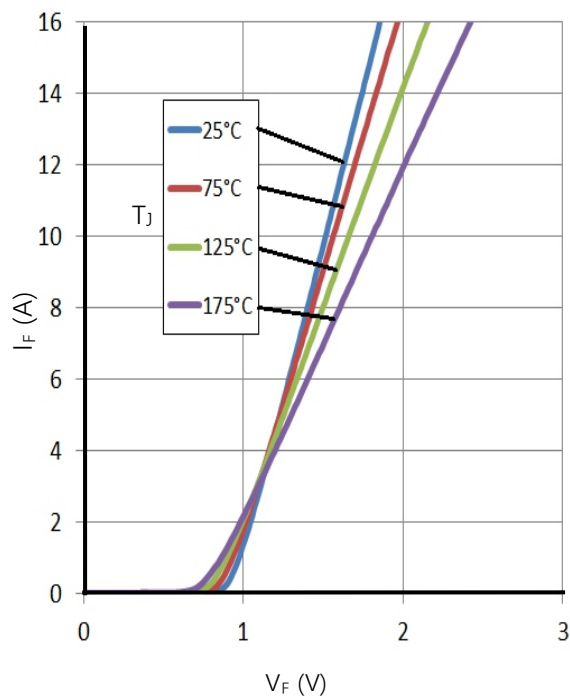


Figure 1. Forward Characteristics

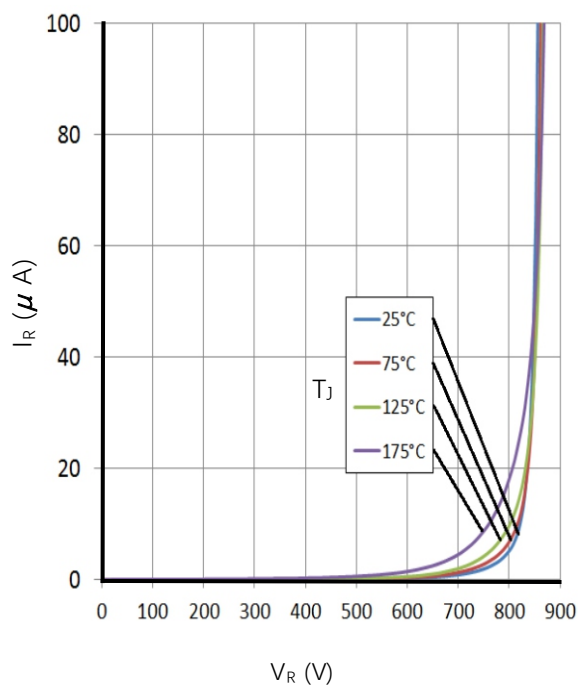


Figure 2. Reverse Characteristics

Typical Performance

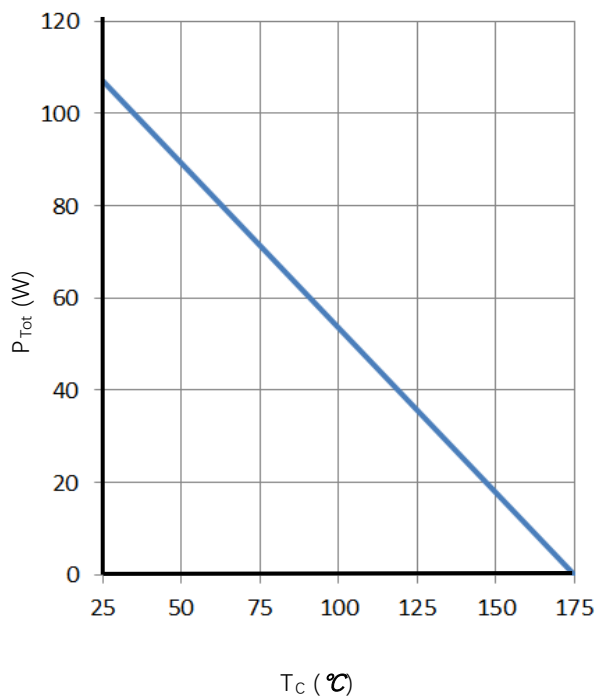


Figure 3. Power Derating

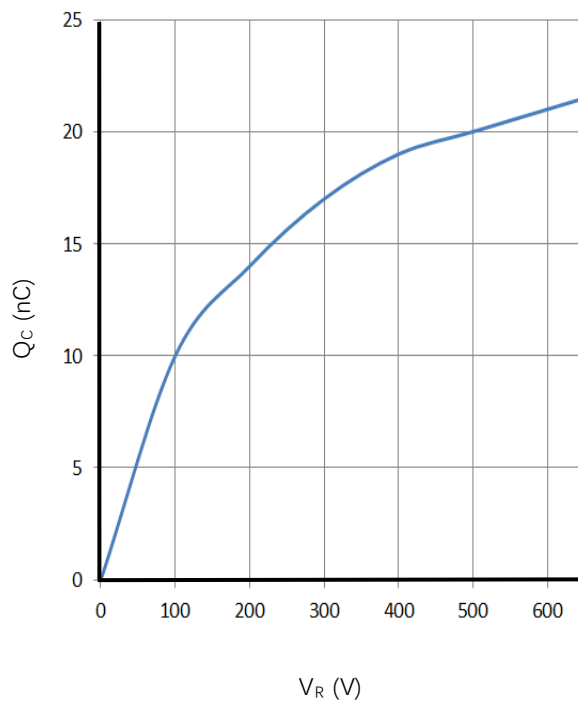


Figure 4. Total Capacitive Charge vs. Reverse Voltage

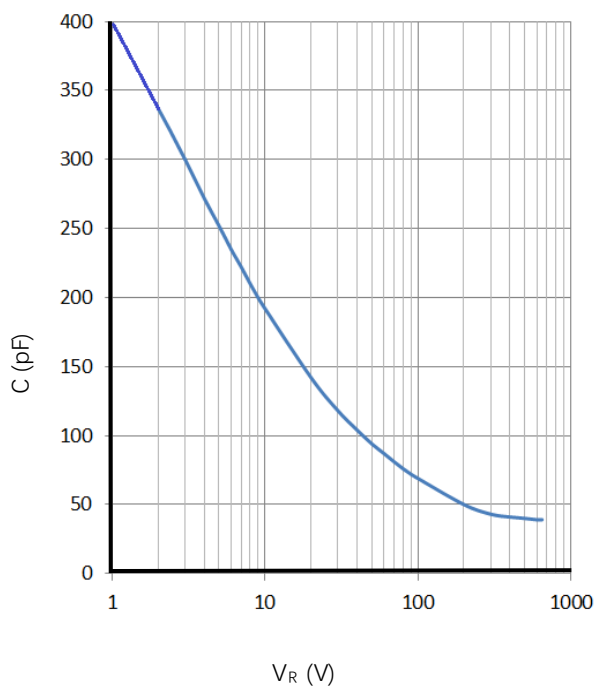


Figure 5. Total Capacitance vs. Reverse Voltage

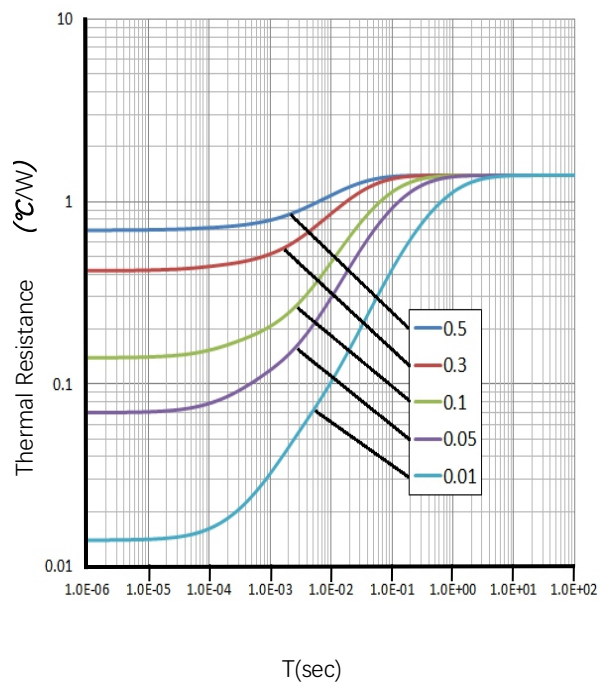


Figure 6. Transient Thermal Impedance

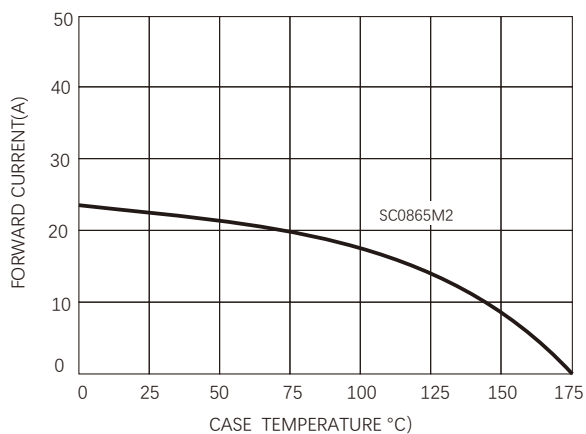
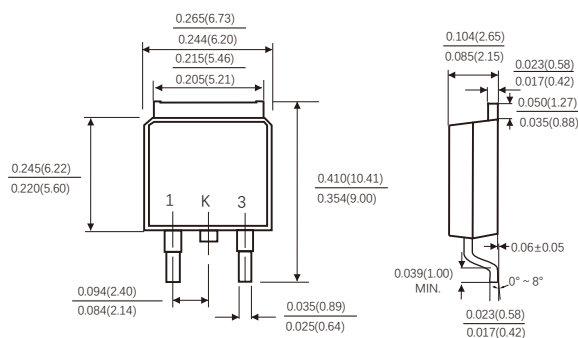


FIG.7-FORWARD CURRENT DERATING CURVE

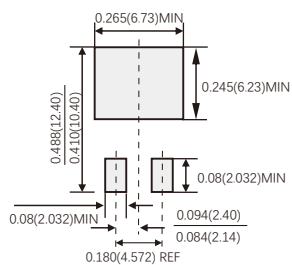
PACKAGE DIMENSIONS

TO-252



Suggested Pad Layout

(TO-252)



(设计者可参考推荐值根据焊接工艺要求自行确定适合的焊盘尺寸)
(Designers can refer to the recommended values according to the manufacturing process requirements to determine the appropriate pad size)

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