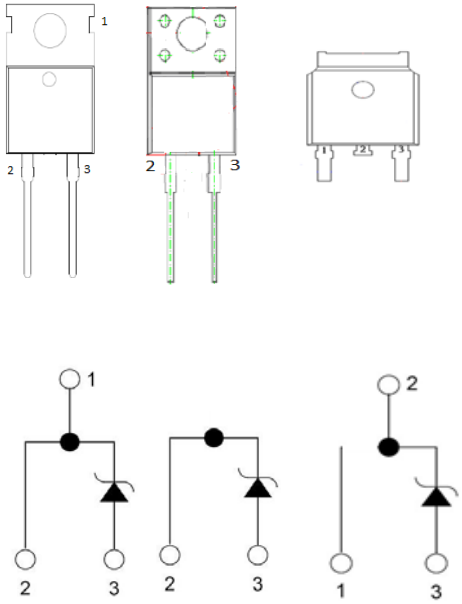
SPD10N65
Silicon Carbide Schottky Diode

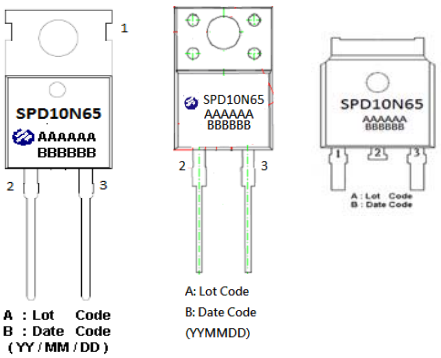
DESCRIPTION
The SPD10N65 is silicon carbide Schottky diode which is fabricated using an advanced process. It delivers high level of performance and robustness in popular AC-DC applications. By providing high voltage and low V_F, these parts can be adopted quickly into new and existing offline power supply designs.

APPLICATIONS
- AC/DC Switching Power Supply
- Server Power
- Motor Driver
- Solar Power
- PV Inverter/UPS

FEATURES
- 650V/32A, V_F=1.75V@I_F=10A
- High blocking voltage
- Zero forward/reverse recovery current
- High frequency operation
- Positive temperature coefficient on V_F
- TO-220-2L/TO-220F-2L/TO252 package design

PIN CONFIGURATION
TO-220 TO-220F TO252



PART MARKING


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ORDERING INFORMATION

Part Number	Package	Part Marking
SPD10N65T252RGB	TO252	SPD10N65
SPD10N65T220TGB	TO-220-2	SPD10N65
SPD10N65T220FTGB	TO-220F-2	SPD10N65

※ SPD10N65T252TGB : Reel ; Pb – Free ; Halogen – Free
※ SPD10N65T220TGB : Tube ; Pb – Free ; Halogen – Free
※ SPD10N65T220FTGB : Tube ; Pb – Free ; Halogen – Free

ABSOULTE MAXIMUM RATINGS

(T_A=25℃ Unless otherwise noted)

Parameter		Symbol	Typical	Unit
Peak Repetitive Reverse Voltage		V_{RRM}	650	V
Peak Reverse Surge Voltage		V_{RSM}	650	V
DC Blocking Voltage		V_R	650	V
Continuous Forward Current	T_C=25℃	I_F	32 16*	A
	T_C=135℃		14 7*	
	T_C=150℃		10 5*	
Non-repetitive Froward Surge Current	T_C=25℃, t_P=10 ms, half Sine	I_{FSM}	65 50*	A
	T_C=150℃, t_P=10 ms, half Sine		55 40*	
	T_C=25℃, t_P=10 us, Square		520 400*	
Repetitive Froward Surge Current	T_C=25℃, t_P=10 ms, Freq = 0.1Hz, 100 Cycles, half Sine	I_{FRM}	55 45*	A
	T_C=150℃, t_P=10 ms, Freq = 0.1Hz, 100 Cycles, half Sine		45 40*	
Power Dissipation		P_D	94 38*	W
Operating Junction Temperature		T_J	-55/175	℃
Storage Temperature Range		T_{STG}	-55/175	℃
Thermal Resistance-Junction to Case		$R_{\theta JC}$	1.6 3.95*	℃/W

*****For TO220F

ELECTRICAL CHARACTERISTICS

(T_A=25℃ Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
DC Blocking Voltage	V_{DC}	I_R = 250uA, T_J = 25℃	650			V
Forward Voltage	V_F	I_F = 10A, T_J = 25℃		1.4	1.75	V
		I_F = 10A, T_J = 125℃		1.5		
		I_F = 10A, T_J = 175℃		1.7		
Reverse Current	I_R	V_R=650V, T_J=25℃		2	50	uA
		V_R=650V, T_J=125℃		6		
		V_R=650V, T_J=175℃		18		
Total Capacitive Charge	Q_C	V_R=400V, T_J=25℃		23		nC
Total Capacitance	C	V_R=1V, T_J=25℃, f=1MHz		395		pF
		V_R=200V, T_J=25℃, f=1MHz		43		
		V_R=400V, T_J=25℃, f=1MHz		32		

TYPICAL CHARACTERICS

Figure 1. Forward Characteristics

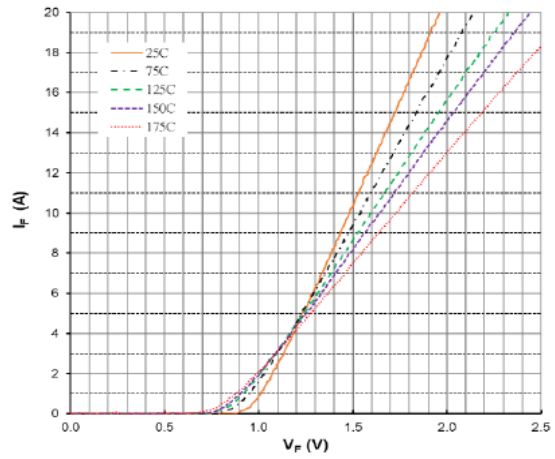


Figure 2. Forward Characteristics

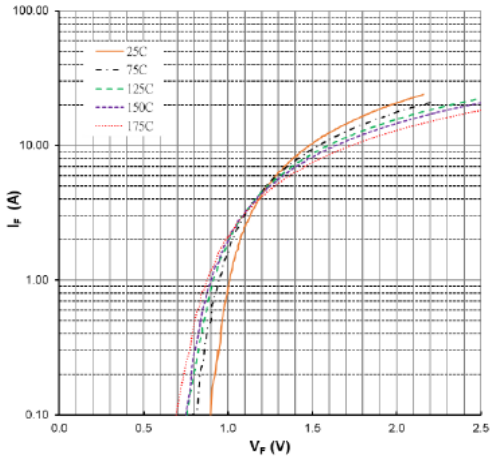


Figure 3. Reverse Characteristics

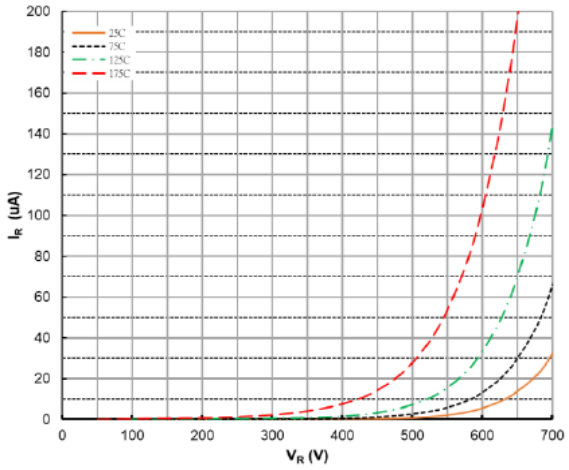


Figure 4. Power Derating

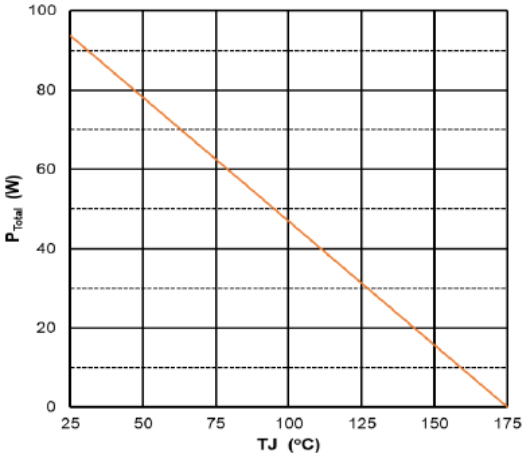


Figure 5. Capacitance vs Reverse Voltage

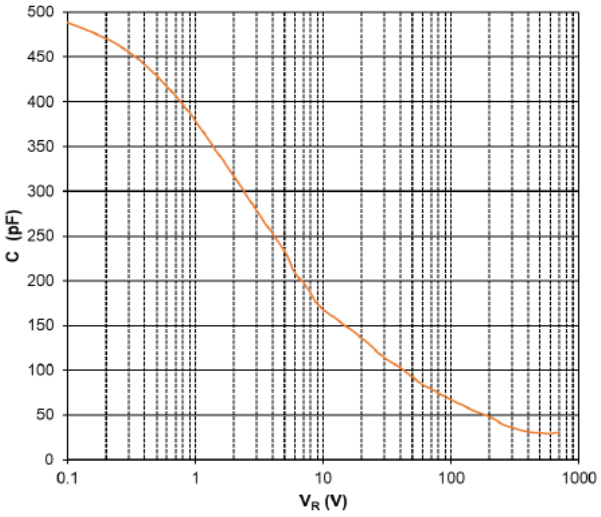


Figure 6. Recovery Charge vs Reverse Voltage

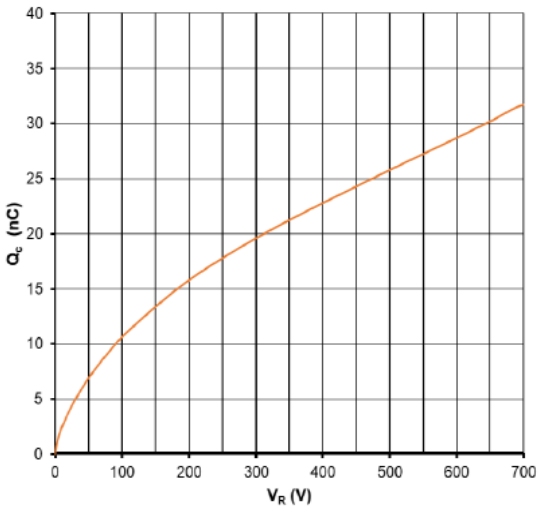
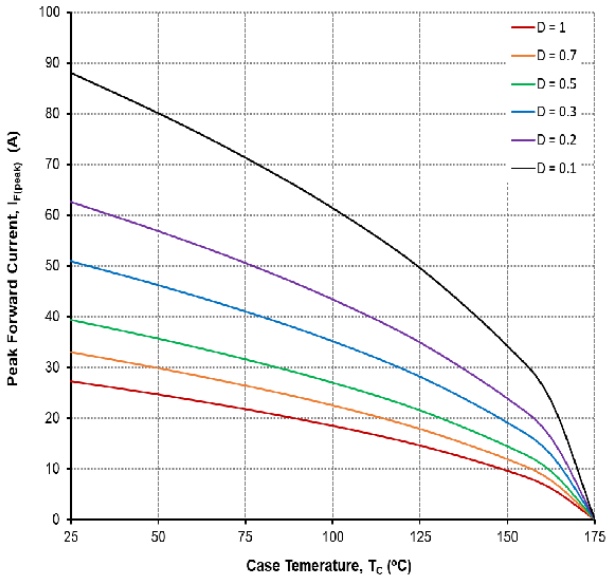


Figure 7 Current De-rating



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