



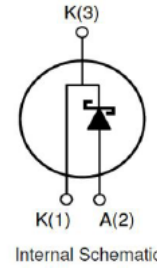
ESIC08065S



Silicon carbide power schottky diode



TO-220AC



Features
<ul style="list-style-type: none"> • Rated to 650V at 8 Amps • Zero reverse recovery current • Zero forward recovery voltage • Temperature independent switching behaviour • High temperature operation • High frequency operation • Marking : ESIC08065S

Benefits
<ul style="list-style-type: none"> • Unipolar rectifier • Substantially reduced switching losses • No thermal run-away with parallel devices • Reduced heat sink requirements

Ordering Information		
Part No.	Package	Packing
ESIC08065S	TO-220AC	50 / Tube

Application
<ul style="list-style-type: none"> • SMPS, e.g., CCM PFC • Motor drives, Solar application, UPS, Wind turbine, Rail traction, EV/HEV

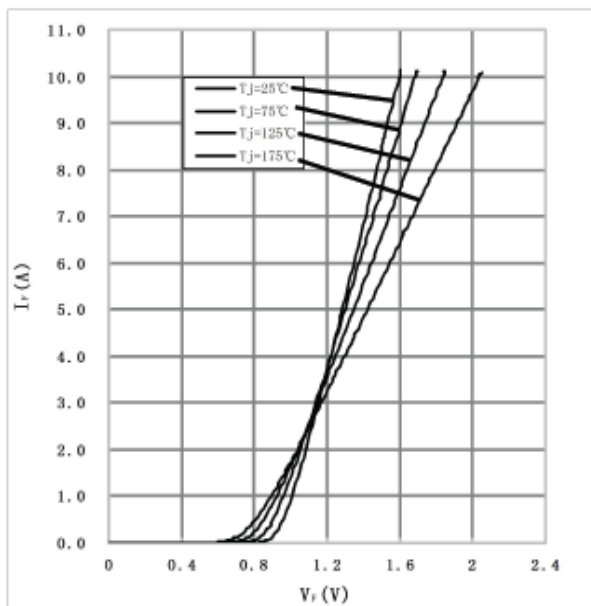
Absolute Maximum Ratings (T _A =25°C unless otherwise specified)				
Parameter	Symbol	Conditions	Limit	Unit
Repetitive Peak Reverse Voltage	V _{RRM}	T _j =25°C	650	V
Surge Peak Reverse Voltage	V _{RSM}	T _j =25°C	650	V
DC Blocking Voltage	V _{DC}	T _j =25°C	650	V
Continuous Forward Current	I _F	T _j =25°C T _j =135°C T _j =151°C	25.5 11 8	A
Repetitive Peak Forward Surge Current	I _{FRM}	T _C =25 °C , tp=10ms, Half Sine Wave, D=0.3	40	A
Non-Repetitive Peak Forward Surge Current	I _{FSM}	T _C =25 °C , tp=10ms, Half Sine Wave, D=0.3	56	A
Power Dissipation	P _{TOT}	T _C =25°C	102.4	W
		T _C =110°C	45	W
Maximum Case Temperature	T _C		135	°C
Operating Junction and Storage Temperature	T _j , T _{stg}		-55~+175	°C
Typical Thermal Resistance from Junction to Case	R _{θJC}		1.465	°C/W



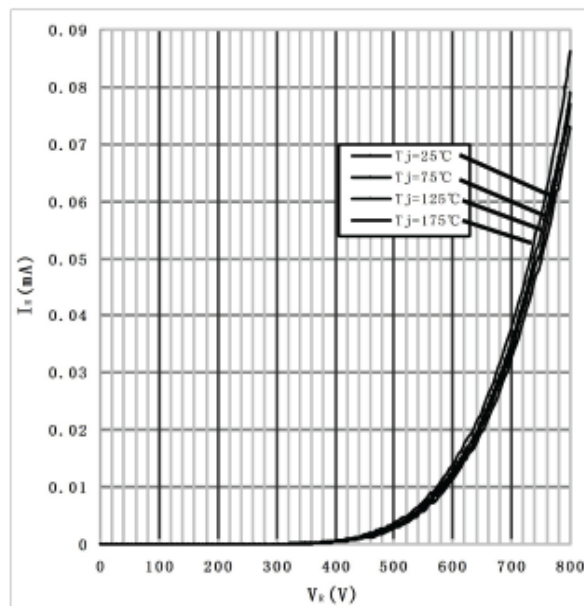
Electrical Characteristics (T _A = 25 °C unless otherwise specified)						
Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Forward Voltage	I _F =8A, T _J =25°C	V _F	-	1.47	1.8	V
	I _F =8A, T _J =175°C		-	1.78	2.5	
Reverse Current	V _R =650V, T _J =25°C	I _R	-	10	100	μA
	V _R =650V, T _J =175°C		-	15	200	
Total Capacitive Charge	V _R =400V, T _J =150°C Q _c = ∫ ₀ ^{V_R} C(V) dV	Q _C	-	30	-	nC
Total Capacitive Charge	V _R =0V, T _J =25°C, f=1MHZ	C	-	550	588	pF
	V _R =200V, T _J =25°C, f=1MHZ		-	56.5	57	
	V _R =400V, T _J =25°C, f=1MHZ		-	54	54.5	

Rating and Characteristics Curves

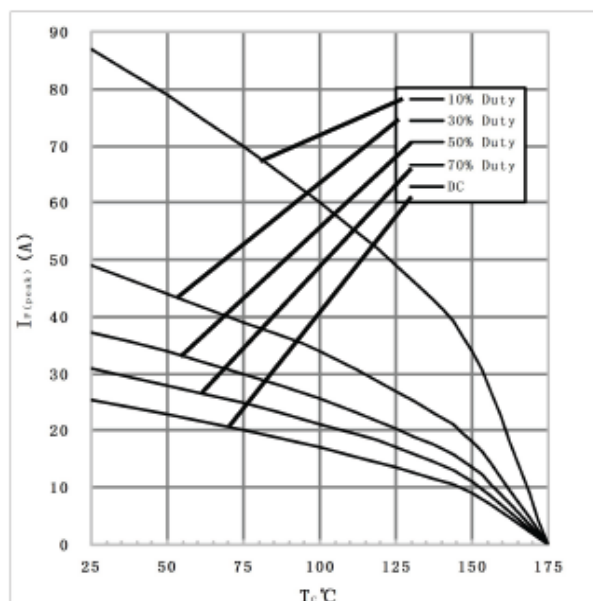
1) Forward IV characteristics as a function of T_J :



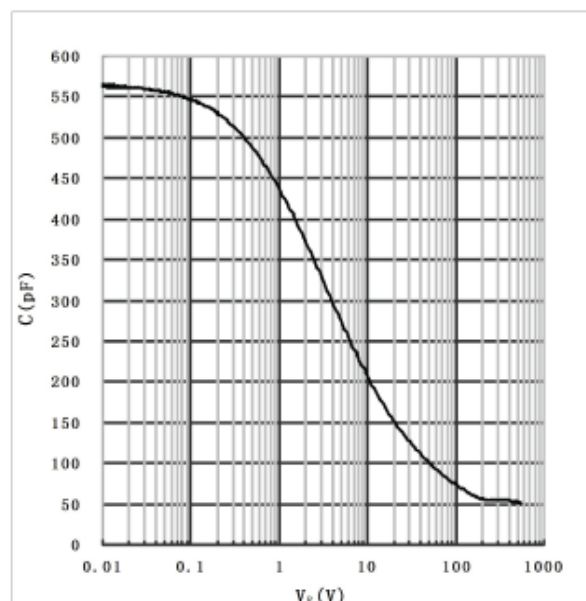
2) Reverse IV characteristics as a function of T_J :



3) Current Derating

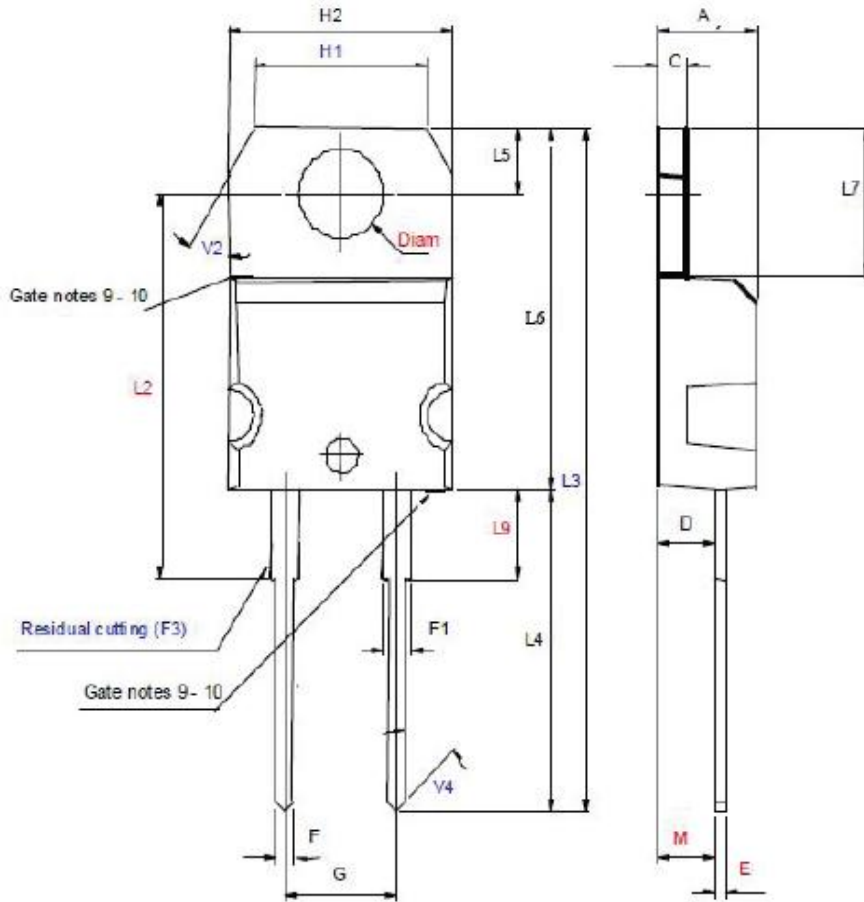


4) Capacitance vs. reverse voltage :





Package Outline Dimensions

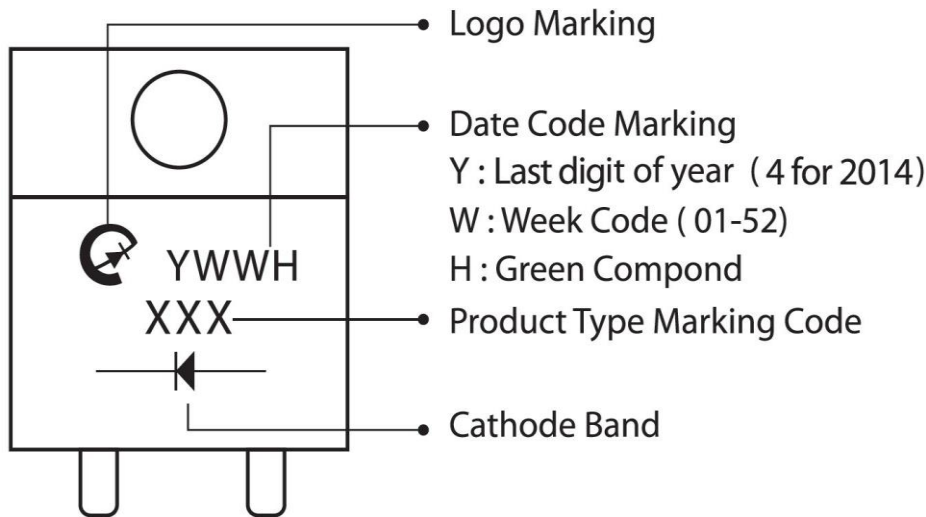


DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.4	4.6	0.173	0.181
C	1.23	1.32	0.048	0.052
D	2.4	2.72	0.094	0.107
E	0.49	0.7	0.019	0.028
F	0.61	0.88	0.024	0.035
F1	1.14	1.7	0.045	0.067
F3		1		0.039
G	4.95	5.15	0.195	0.203
H1	7.7	7.9	0.303	0.311
H2	10	10.4	0.394	0.409
L2	16.4		0.646	
L3	28.9		1.138	
L4	13	14	0.512	0.551
L5	2.65	2.95	0.104	0.116
L6	15.25	15.75	0.600	0.620
L7	6.2	6.6	0.244	0.260
L9	3.5	3.93	0.138	0.155
M	2.6			
V	5°			
V2	30°			
V4	45°			
diam	3.75	3.85	0.148	0.152

TO-220AC

Dimensions in inches and (millimeters)

Marking Information



Bulk Packing

Package	Inner Pack	Inner Box (EA)	Inner Box (mm)	Carton (EA)	Carton Size (mm)	Gross Weight (Kg)-Approx.
TO-220AC	Tube	2000	539x184x79	4000	558x180x200	11.9