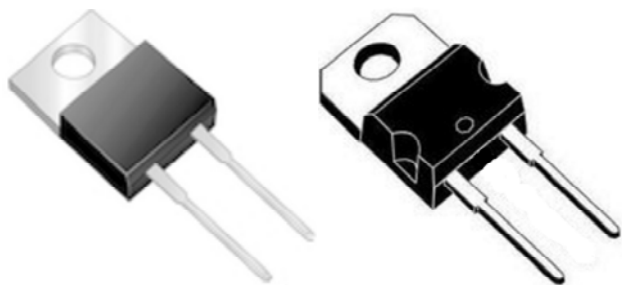
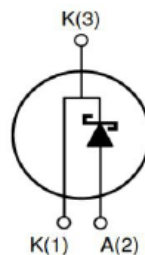




Silicon carbide power schottky diode



TO-220AC



Internal Schematic

Features
<ul style="list-style-type: none"> • Rated to 650V at 4 Amps • Zero reverse recovery current • Zero forward recovery voltage • Temperature independent switching behaviour • High temperature operation • High frequency operation • Marking : ESIC04065S

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
ESIC04065S	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

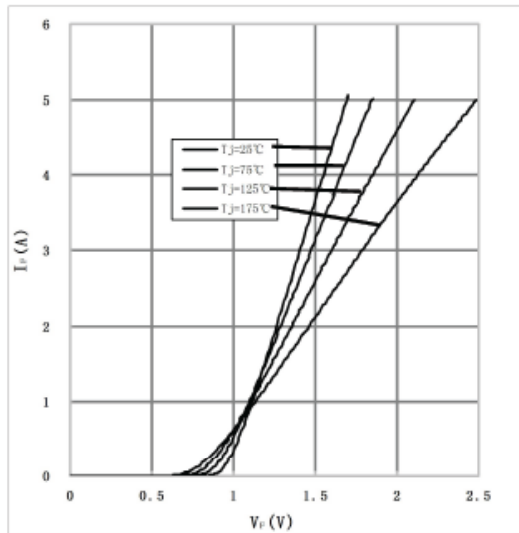
Absolute Maximum Ratings (T _A =25°C unless otherwise specified)				
Parameter	Symbol	Conditions	Limit	Unit
Repetitive Peak Reverse Voltage	V _{RRM}	T _j =25°C	650	V
Surge Peak Reverse Voltage	V _{RSM}	T _j =25°C	650	V
DC Blocking Voltage	V _{DC}	T _j =25°C	650	V
Continuous Forward Current	I _F	T _C =25°C	11	A
		T _C =135°C	5	
		T _C =150°C	4	
Repetitive Peak Forward Surge Current	I _{FRM}	T _C =25 °C , tp=10ms, Half Sine Wave, D=0.3	15	A
Non-Repetitive Peak Forward Surge Current	I _{FSM}	T _C =25 °C , tp=10ms, Half Sine Wave	30	A
Power Dissipation	P _{TOT}	T _C =25°C	53.2	W
		T _C =110°C	30	W
Operating Junction and Storage Temperature	T _j · T _{stg}		-55~+175	°C
Typical Thermal Resistance from Junction to Case	R _{θJC}		2.82	°C/W



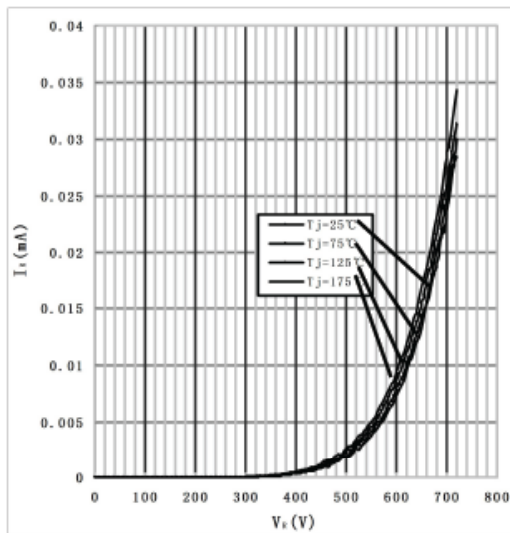
Electrical Characteristics (T _A = 25 °C unless otherwise specified)						
Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Forward Voltage	I _F =4A, T _j =25°C	V _F	-	1.55	1.7	V
	I _F =4A, T _j =175°C		-	2.2	2.5	
Reverse Current	V _R =650V, T _j =25°C	I _R	-	10	100	μA
	V _R =650V, T _j =175°C		-	20	200	
Total Capacitive Charge	V _R =400V, T _j =150°C Q _c = ∫ ₀ ^{V_R} C(V) dV	Q _c	-	11	-	nC
Total Capacitive Charge	V _R =0V, T _j =25°C, f=1MHZ	C	-	181	220	pF
	V _R =200V, T _j =25°C, f=1MHZ		-	22.5	25	
	V _R =400V, T _j =25°C, f=1MHZ		-	20.5	21	

Rating and Characteristics Curves

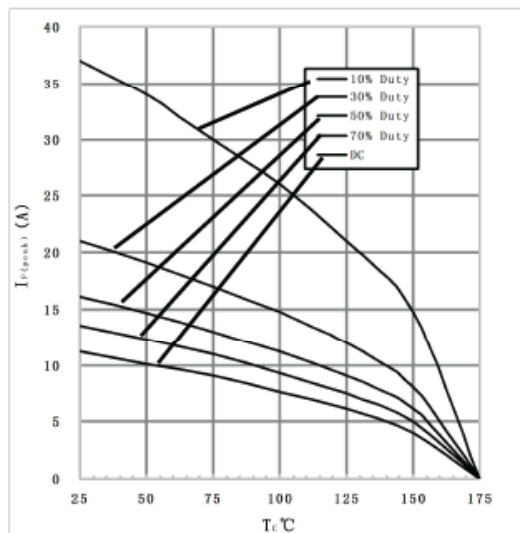
1) Forward IV characteristics as a function of T_j :



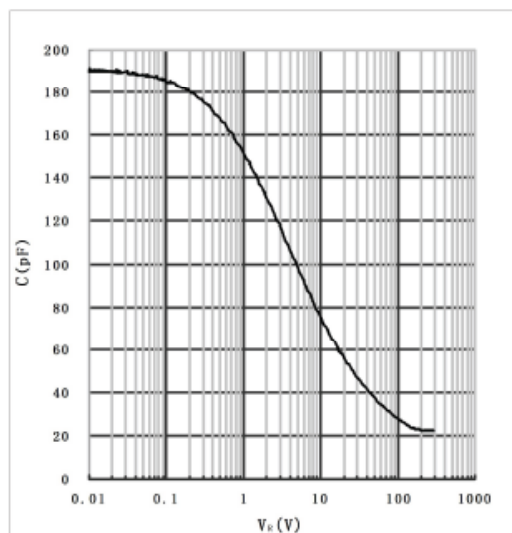
2) Reverse IV characteristics as a function of T_j :



3) Current Derating

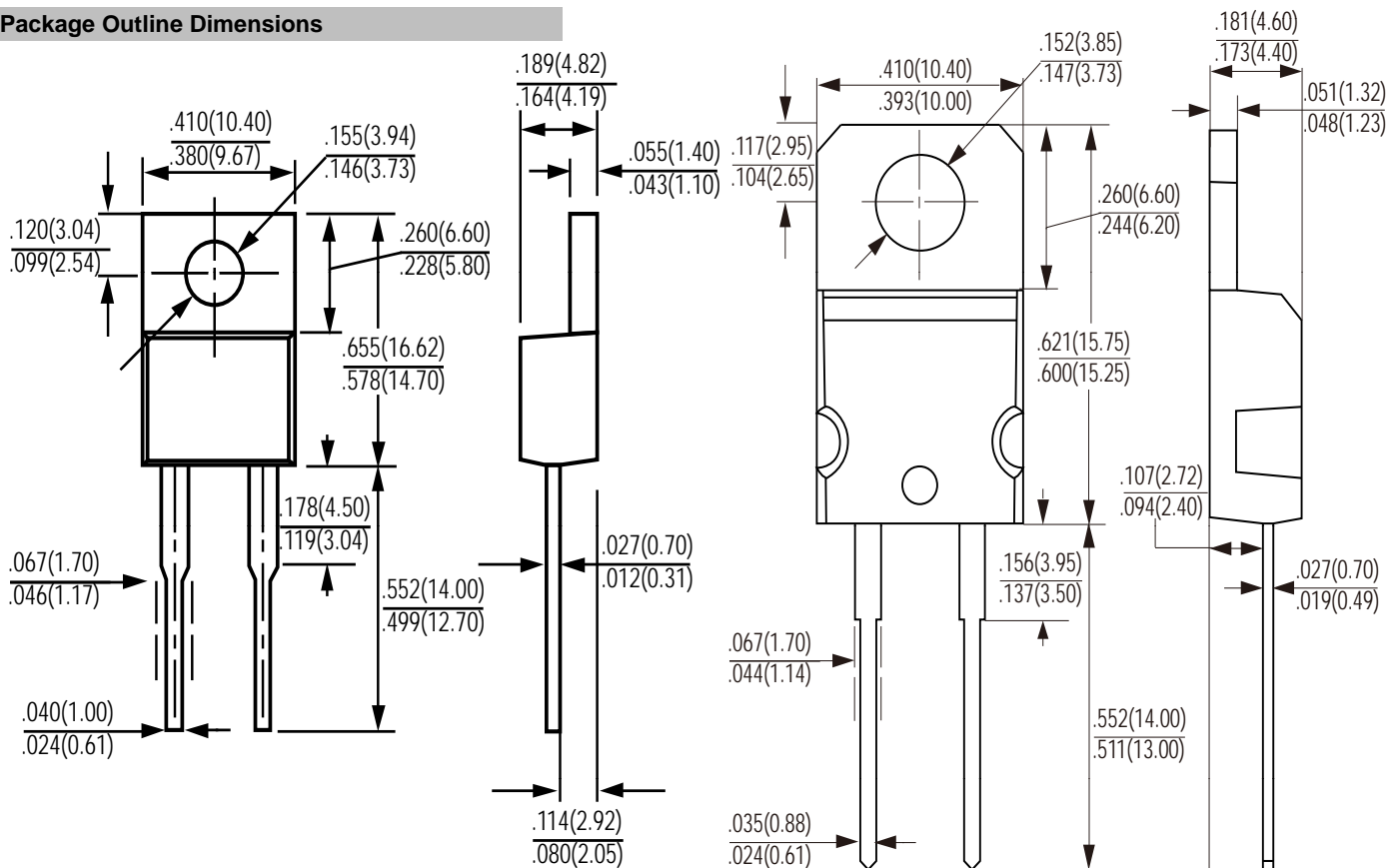


4) Capacitance vs. reverse voltage :





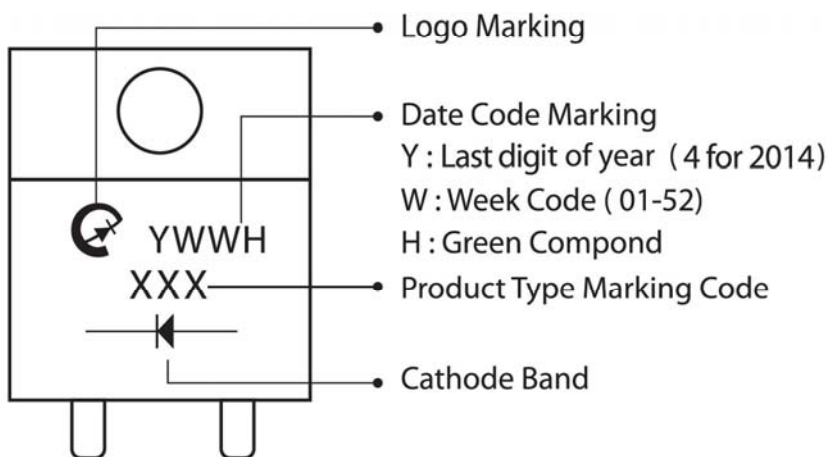
Package Outline Dimensions



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