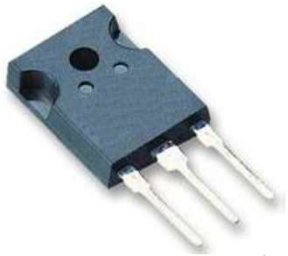
IceMOS Technology

Preliminary
ICEM100D120W

ICEM100D120W
Silicon Carbide Schottky Diode

Product Summary			
I_F	T_C=123°C	100A	Max
V_R		1200V	Min
T_j		175°C	Max
Q_C	V=800V	434nC	Typ

Features
- 1200-Volt Schottky Rectifier
- Zero Reverse Recovery
- Positive Temperature Coefficient on V_F
- Temperature-Independent Switching Behaviour
- Extremely Fast Switching
- Optimized design for high performance power systems



TO247
1:NC, 2:K,
3:A, 4:K

(TO-247)

RoHS COMPLIANT RoHS (EU) 2015/863

CE

HALOGEN FREE

Pb Lead Free

Maximum ratings [a] at T_j=25°C, unless otherwise specified

Parameter	*Symbol*	*Conditions*	*Value*	*Unit*
Repetitive Peak Reverse Voltage	V_{RRM}		1200	V
Continuous Forward Current	I_F	T_c=25°C T_c=123°C	185 100	A
Non-Repetitive Forward Surge Current, t_p=10ms, Half Sine Wave Pulse	I_{FSM}	T_c=25°C T_c=110°C	391 365	A
i^2t value t_p=10ms, Half Sine Wave Pulse	$\int i^2dt$	T_c=25°C T_c=110°C	764 668	A^2s
Operating Junction Temperature and Storage Temperature	T_j, T_{stg}		-55 to +175	°C

a Preliminary data sheet - Specifications subject to change.

Parameter	Symbol	Conditions	Values			Unit
			Min	Typ	Max	
Thermal characteristics						
Thermal resistance, junction-case	R_{thJC}		-	-	0.23	°C/W

Electrical characteristics at T_j=25°C, unless otherwise specified

Forward Voltage	V_F	I_F=100A, T_j=25°C	-	1.53	1.8	V
		I_F=100A, T_j=175°C	-	2.24	-	
Reverse Current	I_R	V_R=1200V, T_j=25°C	-	4	10	µA
		V_R=1200V, T_j=175°C	-	77	-	
Total Capacitive Charge	Q_C	V=800V	-	434	-	nC
Total Capacitance	C	V_R=0V, f=1 MHz	-	6201	-	pF
		V_R=400V, f=1 MHz		408		
		V_R=800V, f=1 MHz		300		

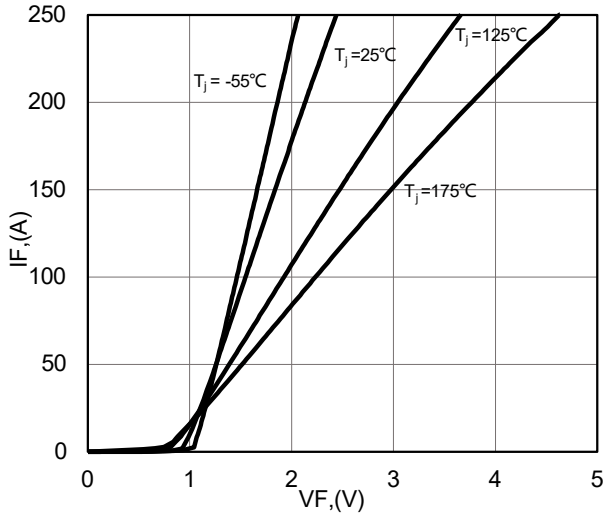


Fig1. Forward Characteristics

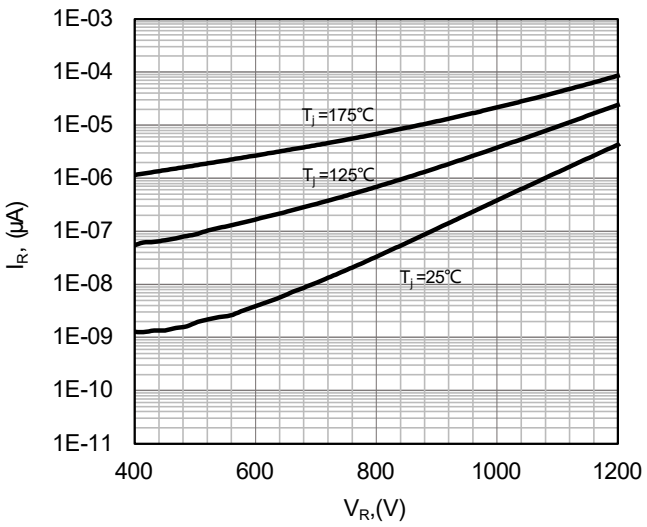


Fig2. Reverse Characteristics

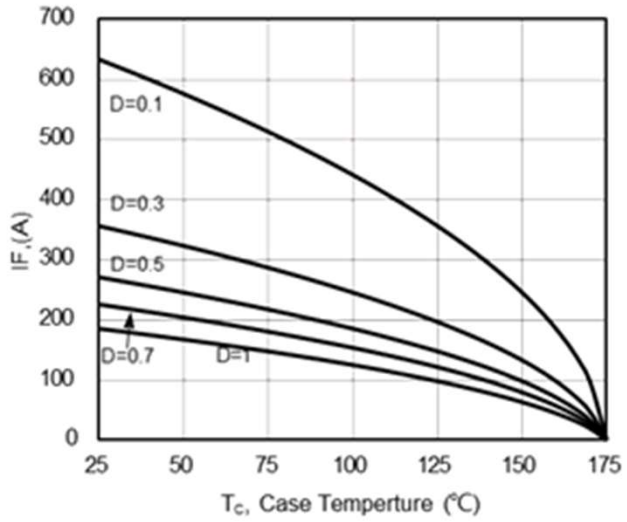


Fig3. Current Derating

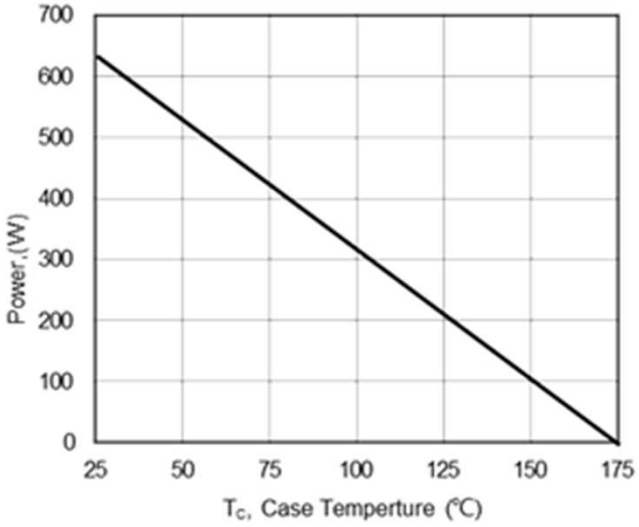


Fig4. Power Derating

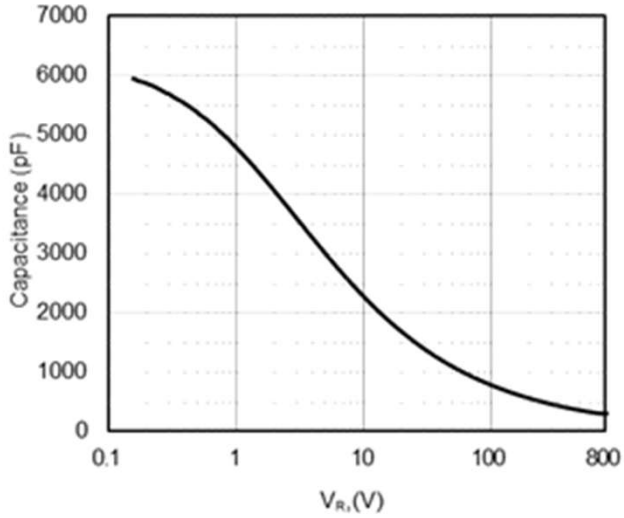


Fig5. Capacitance Characteristics

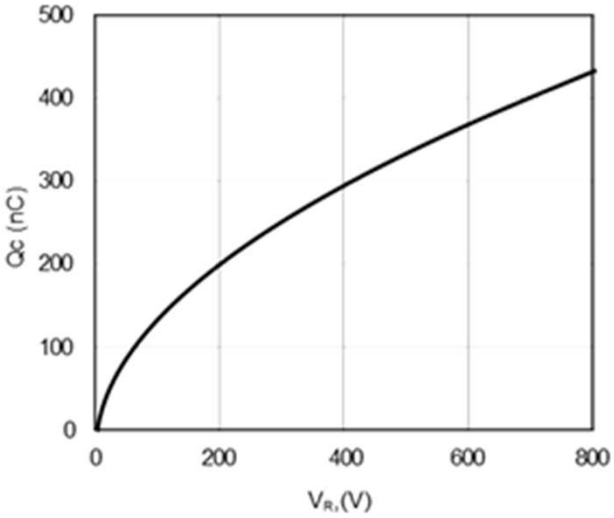


Fig6. Capacitance Charge

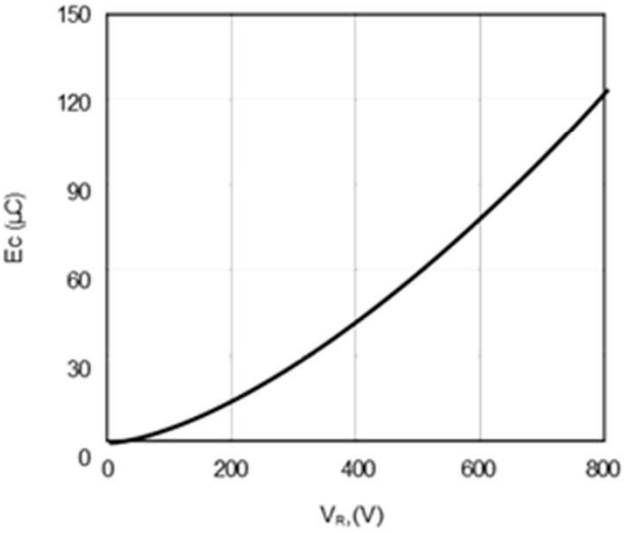


Fig7. Capacitance Stored Energy

Marking Information

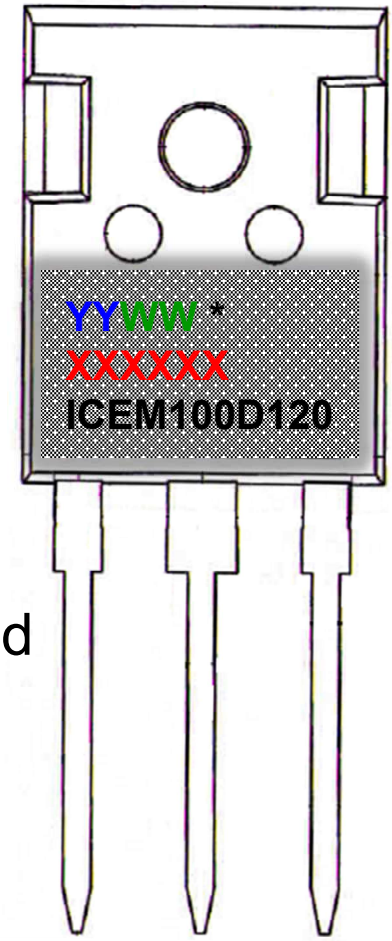
YY = Last two digits of the year

WW = Work week

* = Site ID

XXXXXX = Lot ID

ICEM100D120 = ICE is Icemos logo and M100D120 is a designated device part number



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