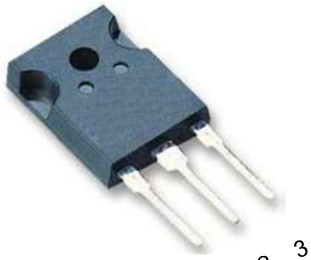
IceMOS Technology

Preliminary
ICEM30D120W

ICEM30D120W
Silicon Carbide Schottky Diode

Product Summary			
I_F	T_C=140°C	30A	Max
V_R		1200V	Min
T_j		175°C	Max
Q_C	V=800V	139nC	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=140°C	72 30	A
Non-Repetitive Forward Surge Current, t_p=10ms, Half Sine Wave Pulse	I_{FSM}	T_c=25°C T_c=110°C	264 240	A
i^2t value t_p=10ms, Half Sine Wave Pulse	$\int i^2dt$	T_c=25°C T_c=110°C	348 288	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}		-	-	0.56	°C/W

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

Forward Voltage	V_F	I_F=30A, T_j=25°C	-	1.42	1.7	V
		I_F=30A, T_j=175°C	-	2.0	-	
Reverse Current	I_R	V_R=1200V, T_j=25°C	-	1	10	µA
		V_R=1200V, T_j=175°C	-	26	-	
Total Capacitive Charge	Q_C	V=800V	-	139	-	nC
Total Capacitance	C	V_R=0V, f=100 kHz	-	1937	-	pF
		V_R=400V, f=100 kHz		131		
		V_R=800V, f=100 kHz		97		

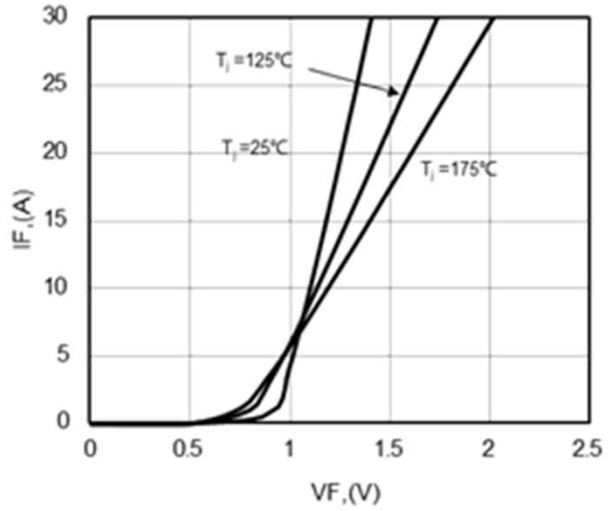


Fig1. Forward Characteristics

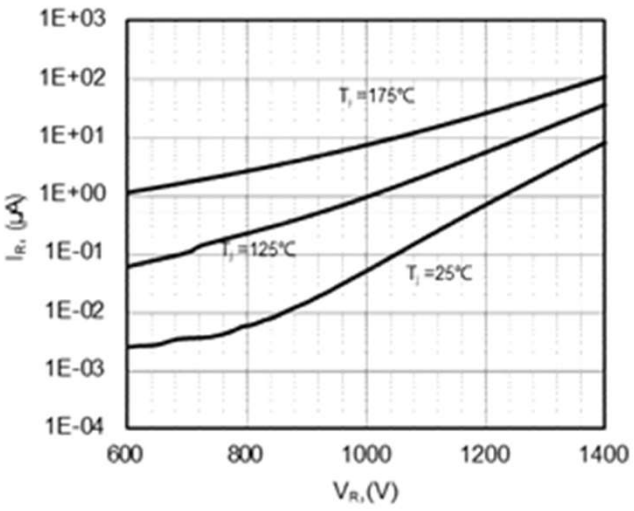


Fig2. Reverse Characteristics

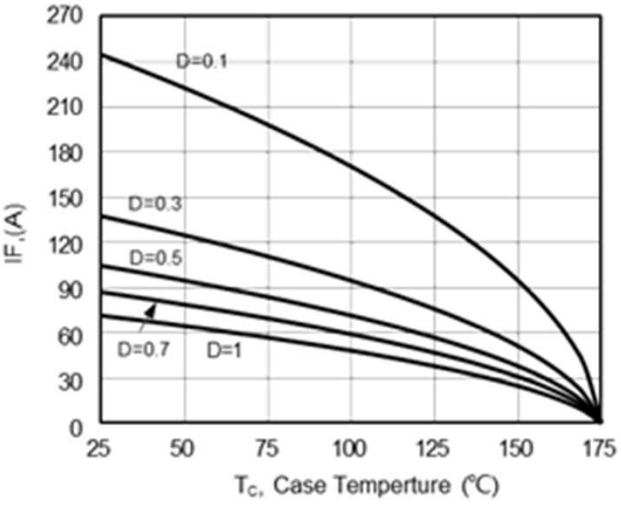


Fig3. Current Derating

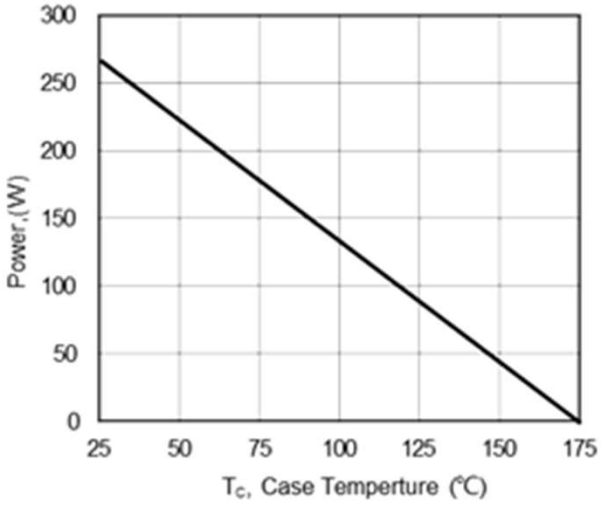


Fig4. Power Derating

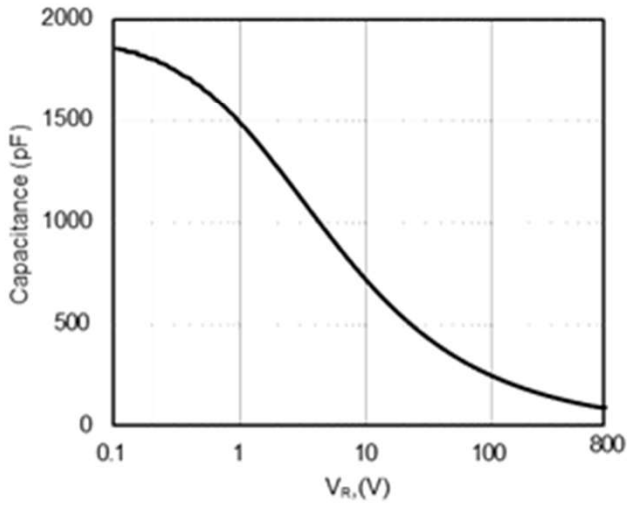


Fig5. Capacitance Characteristics

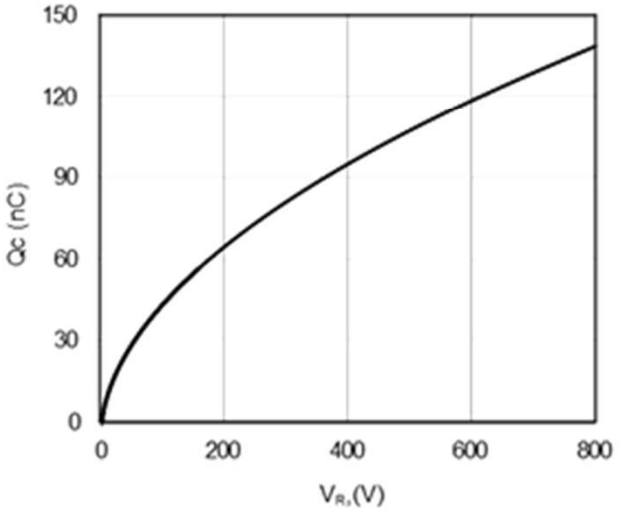


Fig6. Capacitance Charge

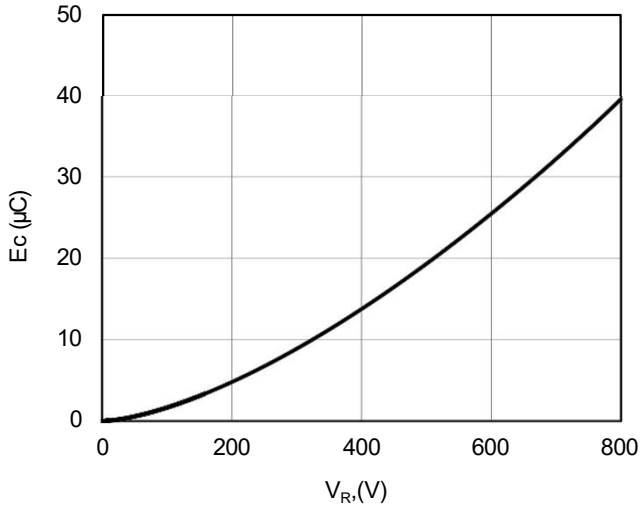


Fig7. Capacitance Stored Energy

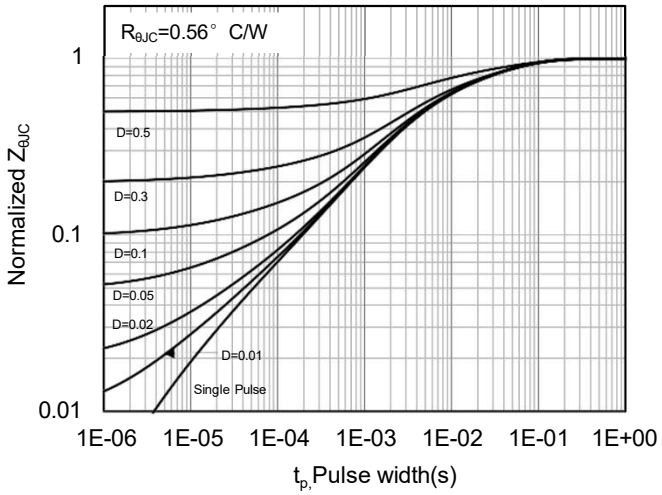


Fig8. Normalized Max. transient thermal impedance

Marking Information

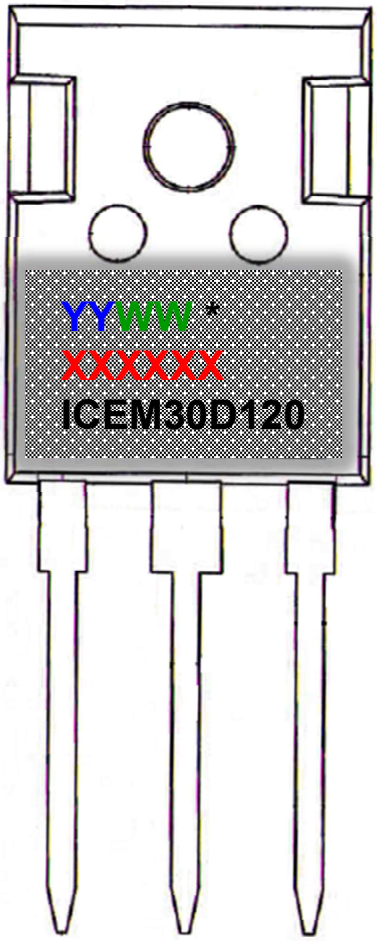
YY = Last two digits of the year

WW = Work week

* = Site ID

XXXXXX = Lot ID

ICEM30D120 = ICE is Icemos logo and M30D120 is a designated device part number



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