



General Description

This product family offers state of the art performance. It is designed for high frequency applications where high efficiency and high reliability are required.

Features

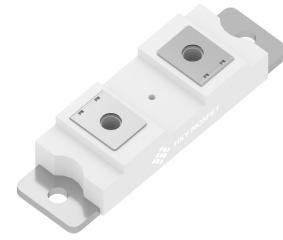
- Low conduction loss due to low V_F
- Extremely low switching loss by tiny Q_c
- Highly rugged due to better surge current
- Industrial standard quality and reliability

Applications

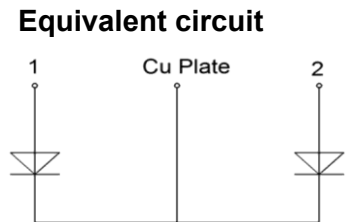
- High Frequency Power Supply
- High Current Switching Power Supply
- Reverse Battery Protection
- Welding Machine

Package Marking and Ordering Information

Ordering Part Number	Package	Brand
C3D150065B	module-B	HXY MOSFET



module-B



Maximum Ratings ($T_C = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	650	V
Surge Peak Reverse Voltage	V_{RSM}	650	V
DC Peak Reverse Voltage	V_R	650	V
Continuous Forward Current (Per Leg/Per Device) $T_C = 25^\circ\text{C}$ $T_C = 110^\circ\text{C}$ $T_C = 125^\circ\text{C}$	I_F	230 170 150	A
Repetitive Peak Forward Surge Current (Per Leg) $T_C = 25^\circ\text{C}, t_p = 10\text{ms}, \text{Half Sine Pulse}$ $T_C = 110^\circ\text{C}, t_p = 10\text{ms}, \text{Half Sine Pulse}$	I_{FRM}	450 360	A
Non-Repetitive Forward Surge Current(Per Leg) $T_C = 25^\circ\text{C}, t_p = 10\text{ms}, \text{Half Sine Pulse}$ $T_C = 110^\circ\text{C}, t_p = 10\text{ms}, \text{Half Sine Pulse}$	I_{FSM}	750 570	A
i^2dt value(Per Leg) $T_C = 25^\circ\text{C}, t_p = 10\text{ms}, \text{Half Sine Pulse}$ $T_C = 110^\circ\text{C}, t_p = 10\text{ms}, \text{Half Sine Pulse}$	$\int i^2 dt$	2812 1624	A^2s
Power dissipation (Per Leg/Per Device) $T_C = 25^\circ\text{C}$ $T_C = 110^\circ\text{C}$	P_{tot}	535 232	W
Operating junction Range	T_j	-55 to +175	$^\circ\text{C}$
Storage temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$



Thermal Resistance

Parameter	Symbol	Typ.	Unit
Thermal resistance, junction – case (Typ. Per leg)	R_{thJC}	0.28	°C/W

Electrical Characteristic (at $T_j = 25^\circ\text{C}$, unless otherwise specified)

Parameter	Symbol	Value			Unit	Test Condition
		min.	typ.	max.		
Forward Voltage	V_F	-	1.45	1.8	V	$I_F=150\text{A}$ $T_j=25^\circ\text{C}$ $T_j=175^\circ\text{C}$
Reverse Current	I_R	-	5	100	μA	$V_R=650\text{V}$ $T_j=25^\circ\text{C}$ $T_j=175^\circ\text{C}$
Total Capacitive Charge	Q_C	-	301	-	nC	$V_R=400\text{V}$, $T_j=25^\circ\text{C}$ $Q_C = \int_0^{V_R} C(V) dV$
Total Capacitance	C	-	5705	-	pF	$T_j=25^\circ\text{C}$, $f=1\text{MHz}$ $V_R=0\text{V}$ $V_R=200\text{V}$ $V_R=400\text{V}$

Characteristics Curve

Fig 1: Forward Characteristics

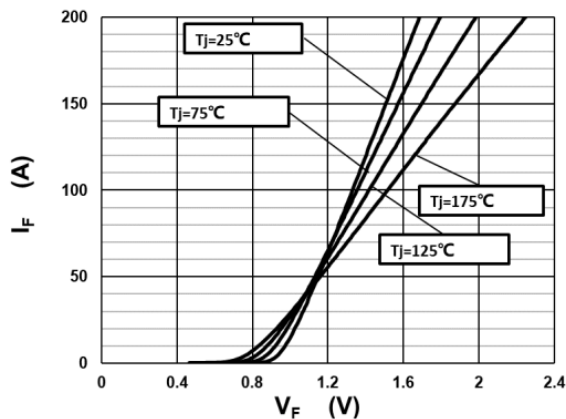


Fig 2: Reverse Characteristics

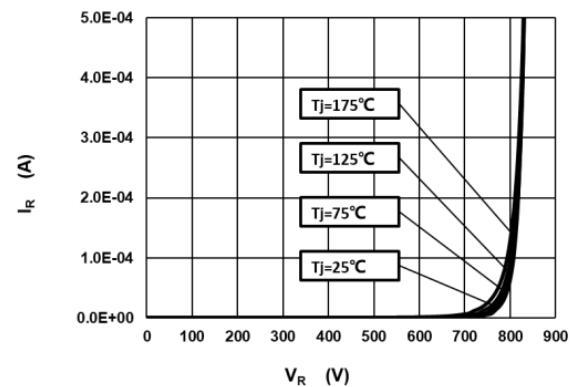




Fig 3: Current Derating

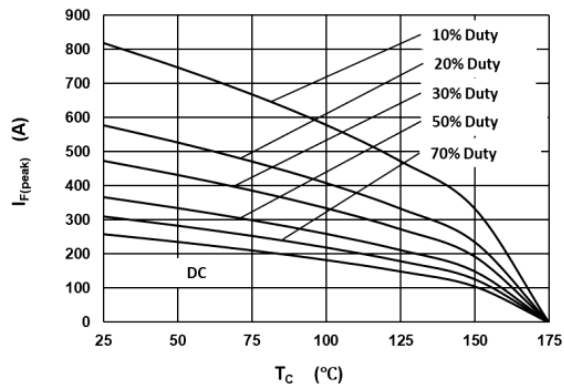


Fig 4: Power Derating

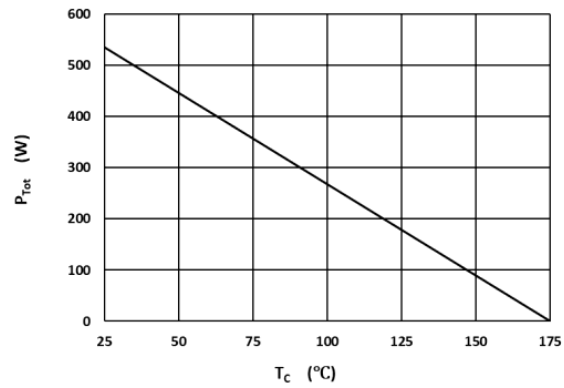


Fig 5: Capacitance vs. Reverse Voltage

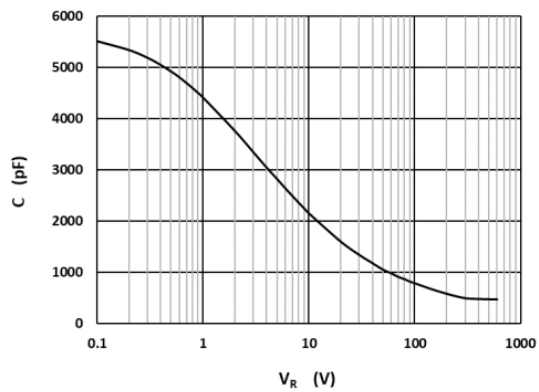


Fig 6: Reverse Charge vs. Reverse Voltage

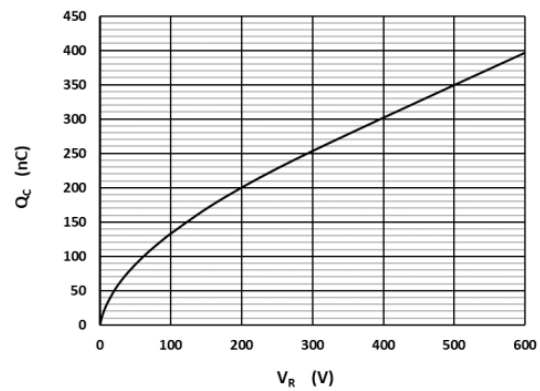


Fig 7: Typical Capacitance Stored Energy

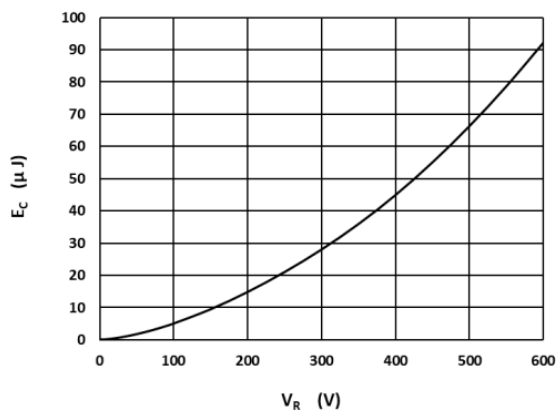
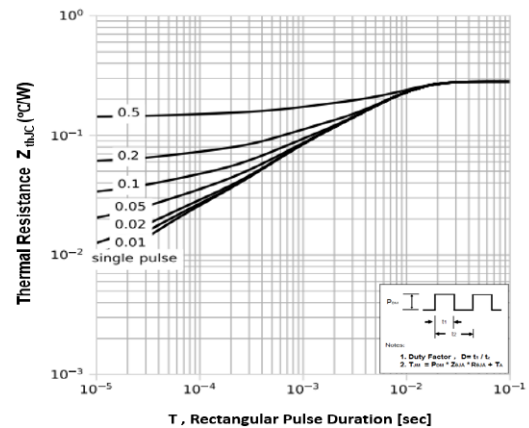


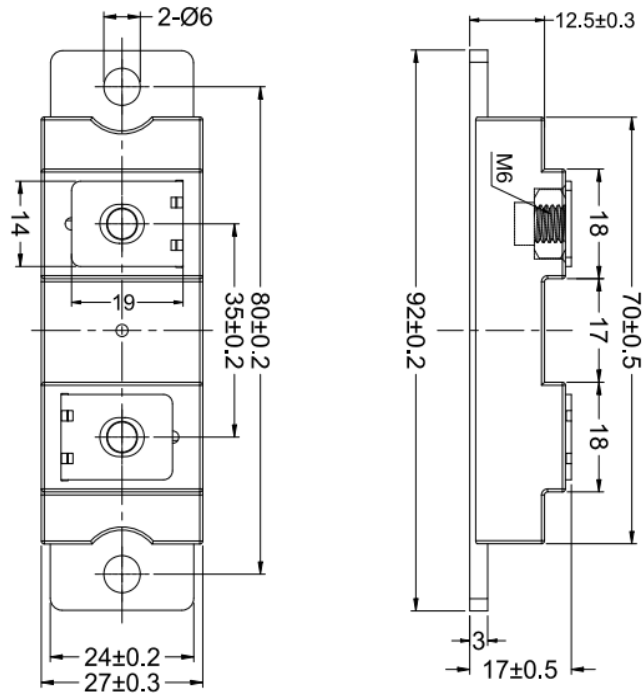
Fig 8: Transient Thermal Impedance





Package Dimensions

Package module-B





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