



General Description

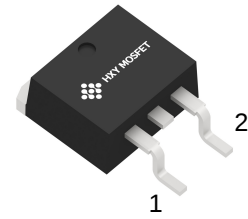
This product family offers state of the art performance. It is designed for high frequency applications where high efficiency and high reliability are required.

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

- UPS
- Power Inverter
- High performance SMPS
- Power factor correction



TO-263



Ordering Part Number	Package	Marking
HC1D15065G	TO-263	HC1D15065G





Maximum Ratings(at T_c = 25 °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 T _C = 25°C T _C = 135°C T _C = 159°C	I _F	49 25 16	A
Repetitive Peak Forward Surge Current T _C = 25°C, t _p = 10ms, Half Sine Pulse T _C = 110°C, t _p = 10ms, Half Sine Pulse	I _{FRM}	70 56	A
Non-Repetitive Forward Surge Current T _C = 25°C, t _p = 10ms, Half Sine Pulse T _C = 110°C, t _p = 10ms, Half Sine Pulse	I _{FSM}	128 98	A
i ² dt value T _C = 25°C, t _p = 10ms, Half Sine Pulse T _C = 110°C, t _p = 10ms, Half Sine Pulse	∫i ² dt	81 48	A ² s
Power dissipation T _C = 25°C T _C = 110°C	P _{tot}	125 54	W
Operating junction Range	T _j	-55 to +175	°C
Storage temperature Range	T _{stg}	-55 to +150	°C

Thermal Resistance

Parameter	Symbol	Typ.	Unit
Thermal resistance, junction – case.	R _{thJC}	1.20	°C/W



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

Parameter	Symbol	Value			Unit	Test Condition
		min.	typ.	max.		
Forward Voltage	V_F	-	1.3	1.5	V	$I_F=15\text{A}$ $T_j=25^\circ\text{C}$ $T_j=175^\circ\text{C}$
Reverse Current	I_R	-	-	100	μA	$V_R=650\text{V}$ $T_j=25^\circ\text{C}$ $T_j=175^\circ\text{C}$
Total Capacitive Charge	Q_C	-	52	-	nC	$V_R=400\text{V}$, $T_j=25^\circ\text{C}$ $Q_C = \int_0^{V_R} C(V) dV$
Total Capacitance	C	-	993	-	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

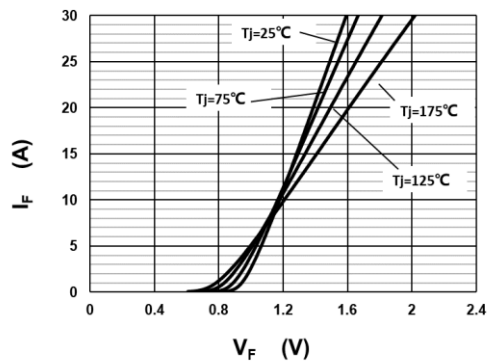


Fig 2: Reverse Characteristics

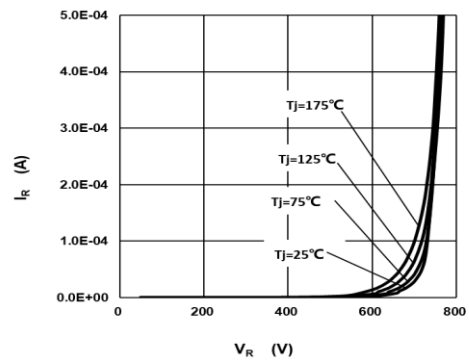


Fig 3: Current Derating

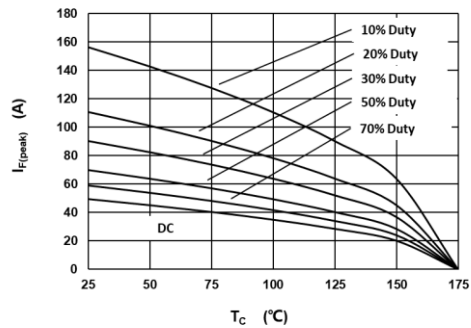


Fig 4: Power Derating

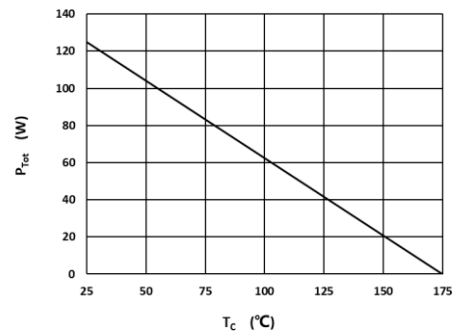




Fig 5: Capacitance vs. Reverse Voltage

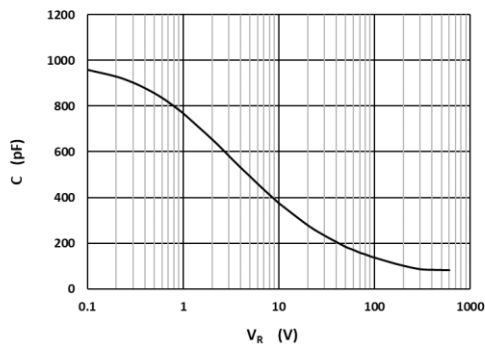


Fig 6: Reverse Charge vs. Reverse Voltage

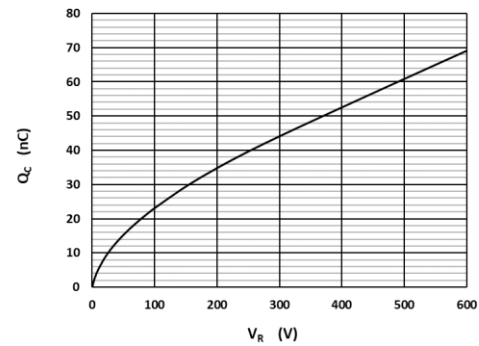


Fig 7: Typical Capacitance Stored Energy

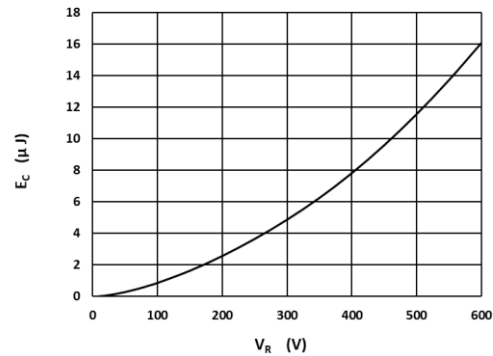
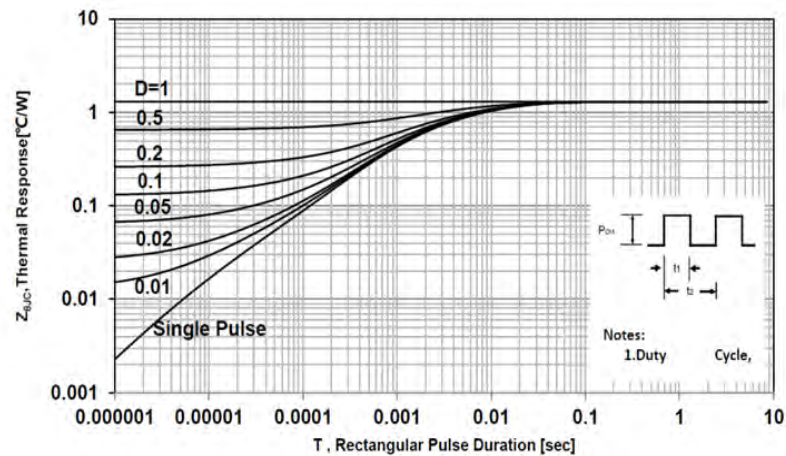


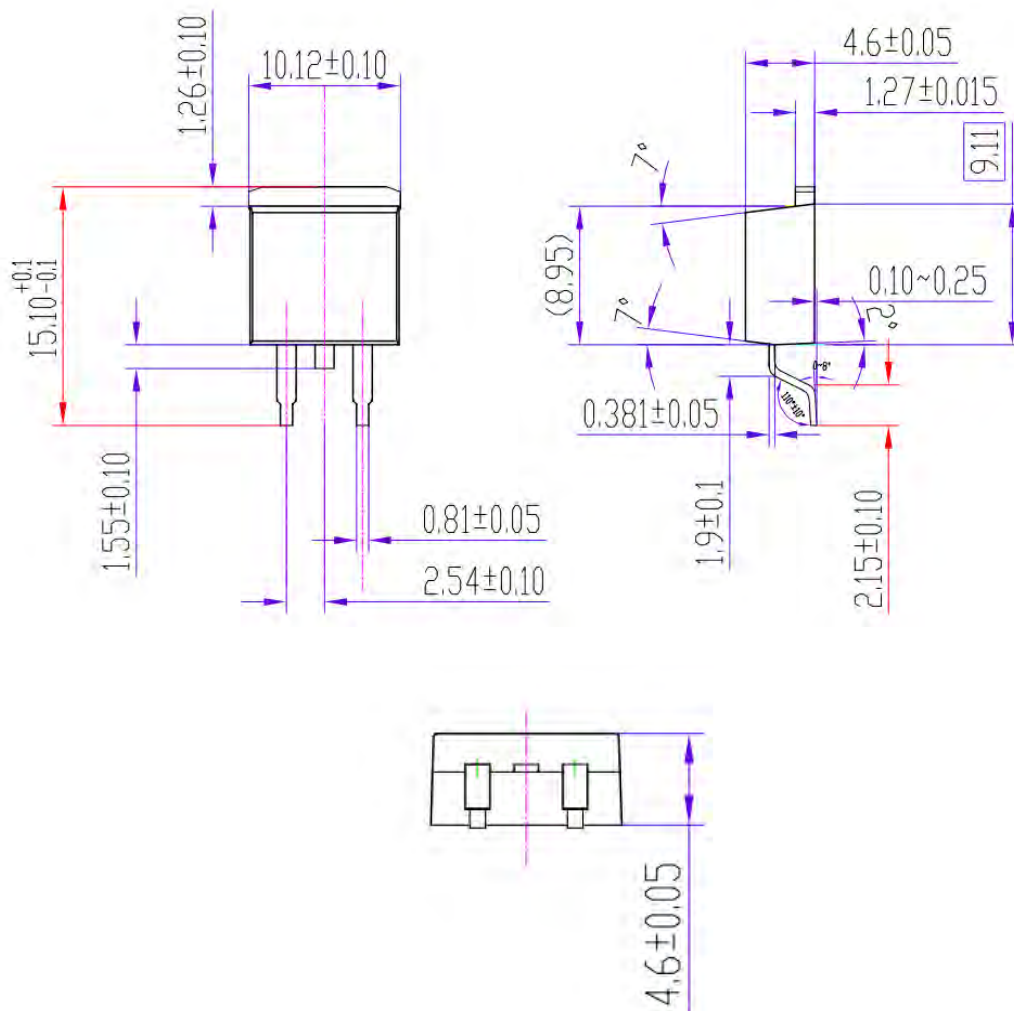
Fig 8: Transient Thermal Impandance





Package Dimensions

Package TO-263





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