



## General Description

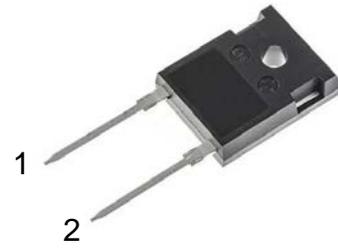
This product family offers state of the art performance. It is designed for high frequency applications where high efficiency and high reliability are required.

## 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-247-2L  
Package



Part Number	Package	Marking
HC3D20065H	TO-247-2L	H320065PP

## Maximum Ratings

Symbol	Parameter	Value	Unit	Test Conditions
$V_{RRM}$	Repetitive Peak Reverse Voltage	650	V	
$V_{RSM}$	Surge Peak Reverse Voltage	650	V	
$V_R$	DC Peak Reverse Voltage	650	V	
$I_F$	Continuous Forward Current	26	A	$T_C=135^{\circ}\text{C}$
$I_{FRM}$	Repetitive Peak Forward Surge Current	102 63	A	$T_C=25^{\circ}\text{C}, t_p=10\text{ ms}, \text{Half Sine Wave}, D=1$ $T_C=110^{\circ}\text{C}, t_p=10\text{ ms}, \text{Half Sine Wave}, D=1$
$I_{FSM}$	Non-Repetitive Peak Forward Surge Current	150 120	A	$T_C=25^{\circ}\text{C}, t_p=10\text{ms}, \text{Half Sine Wave}, D=1$ $T_C=110^{\circ}\text{C}, t_p=10\text{ ms}, \text{Half Sine Wave}, D=1$
$P_{tot}$	Power Dissipation	150 65	W	$T_C=25^{\circ}\text{C}$ $T_C=110^{\circ}\text{C}$
$\int i^2 dt$	$i^2 dt$ value	112 72	$\text{A}^2\text{s}$	$T_C = 25^{\circ}\text{C}, t_p=10\text{ms}, \text{Half Sine Pulse}$ $T_C = 110^{\circ}\text{C}, t_p=10\text{ms}, \text{Half Sine Pulse}$
$T_J$	Operating Junction Range	-55 to +175	$^{\circ}\text{C}$	
$T_{stg}$	Storage Temperature Range	-55 to +150	$^{\circ}\text{C}$	



### Electrical Characteristics

Parameter	Symbol	Value			Unit	Test Condition
		min.	typ.	max.		
Forward Voltage	$V_F$	-	1.35	1.5	V	$I_F=20A$ $T_J=25^{\circ}C$
		-	1.7	1.8		$T_J=175^{\circ}C$
Reverse Current	$I_R$	-	2	40	$\mu A$	$V_R=650V$ $T_J=25^{\circ}C$
		-	10	100		$T_J=175^{\circ}C$
Total Capacitive Charge	$Q_C$	-	52	-	nC	$V_R=400V, T_J=25^{\circ}C$ $Q_C = \int_0^{V_R} C(V)dV$
Total Capacitance	C	-	1018	-	pF	$T_J=25^{\circ}C, f=1MHz$ $V_R=0V$
		-	104	-		$V_R=200V$
		-	89	-		$V_R=400V$

### Thermal Characteristics

Symbol	Parameter	Typ.	Unit
$R_{\theta JC}$	Thermal Resistance from Junction to Case	1.00	$^{\circ}C/W$

### Typical Performance

Fig 1: Forward Characteristics

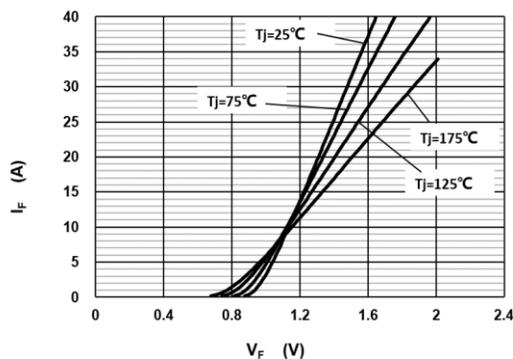


Fig 2: Reverse Characteristics

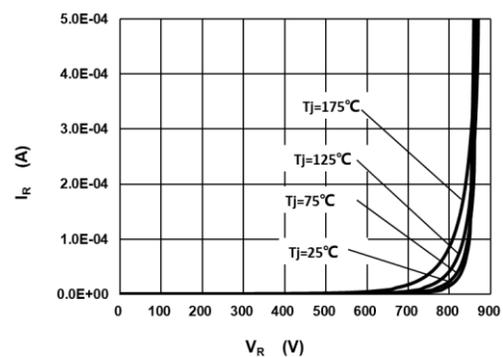




Fig 3: Current Derating

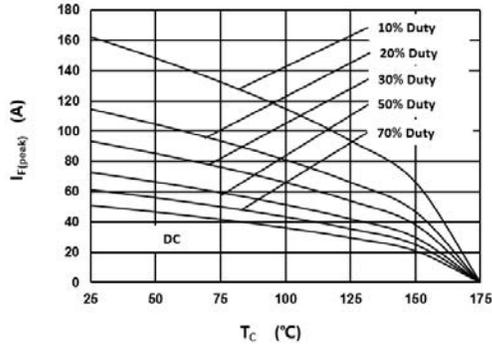


Fig 4: Power Derating

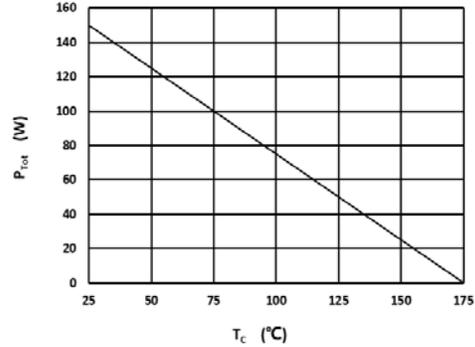


Fig 5: Capacitance vs. Reverse Voltage

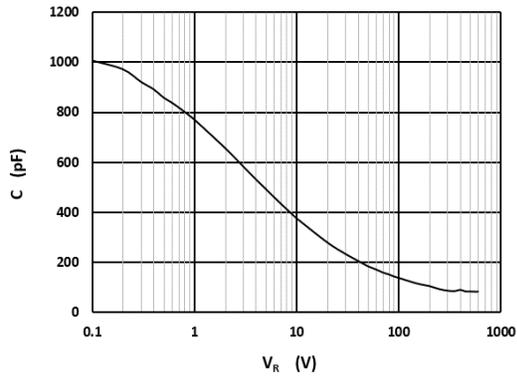


Fig 6: Reverse Charge vs. Reverse Voltage

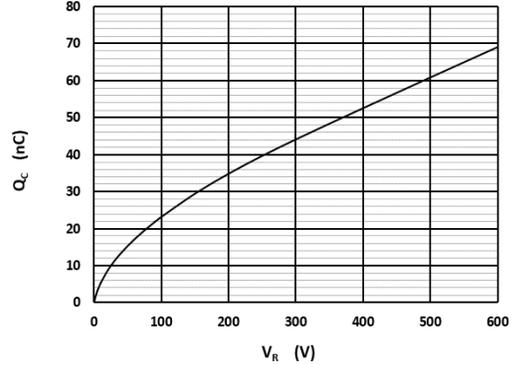


Fig 7: Typical Capacitance Stored Energy

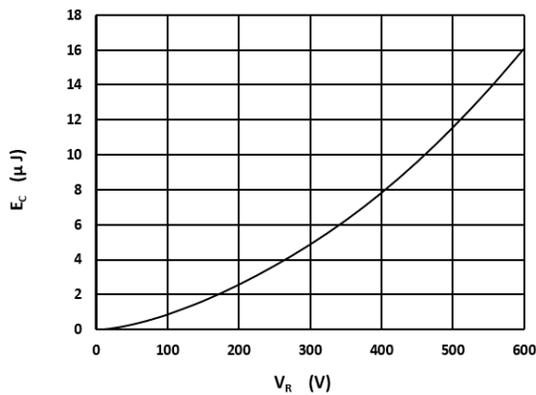
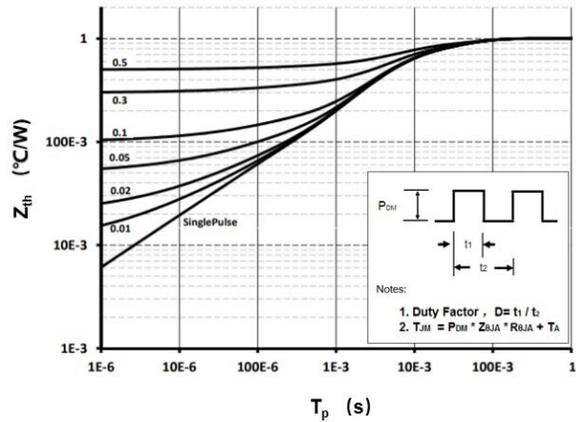


Fig 8: Transient Thermal Impedance







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