



General Description

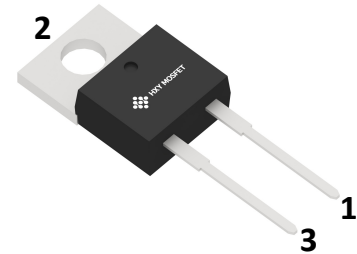
This product family offers state of the art performance. It is designed for high frequency applications where high efficiency and high reliability are required.

Features

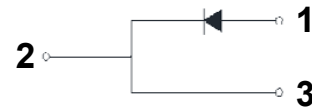
- Low conduction loss due to low V_f
- Extremely low switching loss by tiny Q_c
- Highly rugged due to better surge current
- Industrial standard quality and reliability

Applications

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



TO-220H-2L



Ordering Part Number	Package	Marking
C1D02065A	TO-220H-2L	HC1D02065A





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 = 162°C	I _F	8 4 2	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}	12 8	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}	18 14	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	1.62 0.98	A ² s
Power dissipation T _C = 25°C T _C = 110°C	P _{tot}	37.5 16	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(TYP)}	3.0	°C/W



Electrical Characteristic (at Tc = 25 °C, unless otherwise specified)

Parameter	Symbol	Value			Unit	Test Condition
		min.	typ.	max.		
Forward Voltage	V_F	-	1.3	1.5	V	$I_F=2A$ $T_j=25^{\circ}C$
		-	1.5	-		$T_j=175^{\circ}C$
Reverse Current	I_R	-	10	50	μA	$V_R=650V$ $T_j=25^{\circ}C$
		-	40	150		$T_j=175^{\circ}C$
Total Capacitive Charge	Q_C	-	3.7	-	nC	$V_R=400V, T_j=25^{\circ}C$ $Q_C = \int_0^{V_R} \hat{C}(V) dV$
Total Capacitance	C	-	181	-	pF	$T_j=25^{\circ}C, f=1MHz$
		-	10	-		$V_R=0V$
		-	-	-		$V_R=200V$
		-	8	-		$V_R=400V$

Characteristics Curve

Fig 1: Forward Characteristics

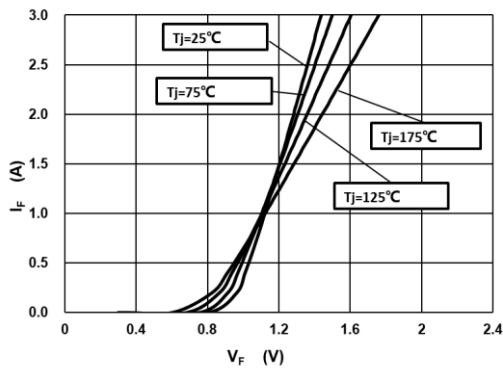


Fig 2: Reverse Characteristics

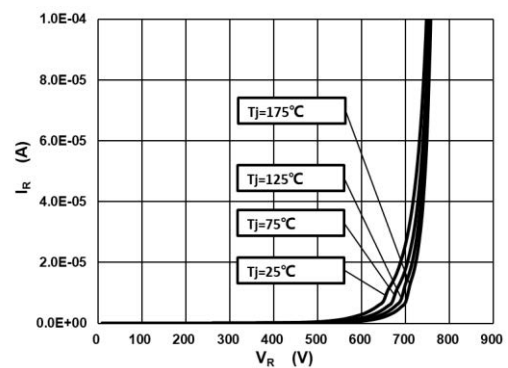




Fig 3: Current Derating

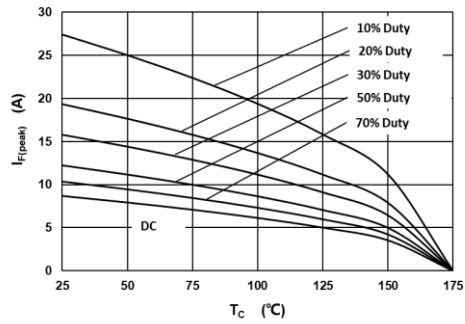


Fig 4: Power Derating

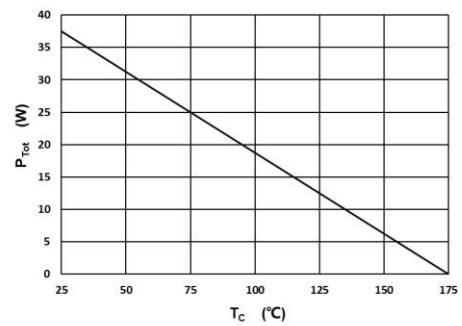


Fig 5: Capacitance vs. Reverse Voltage

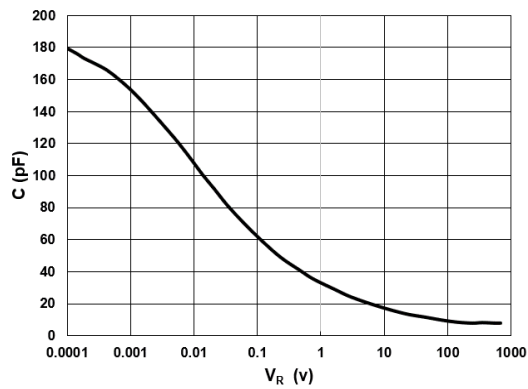


Fig 6: Reverse Charge vs. Reverse Voltage

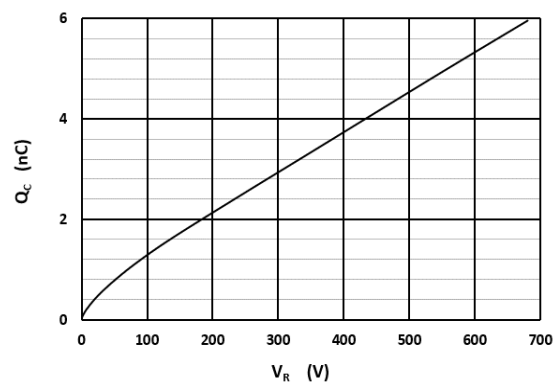


Fig 7: Typical Capacitance Stored Energy

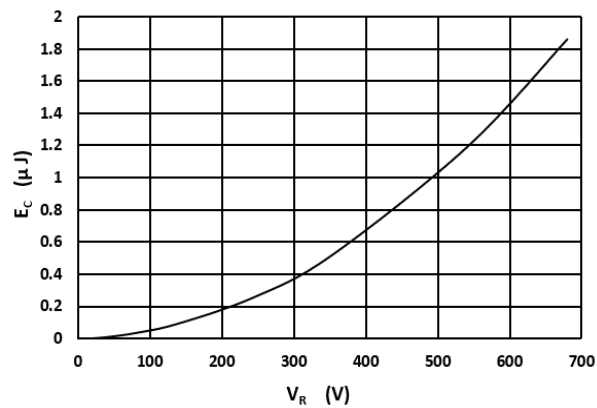
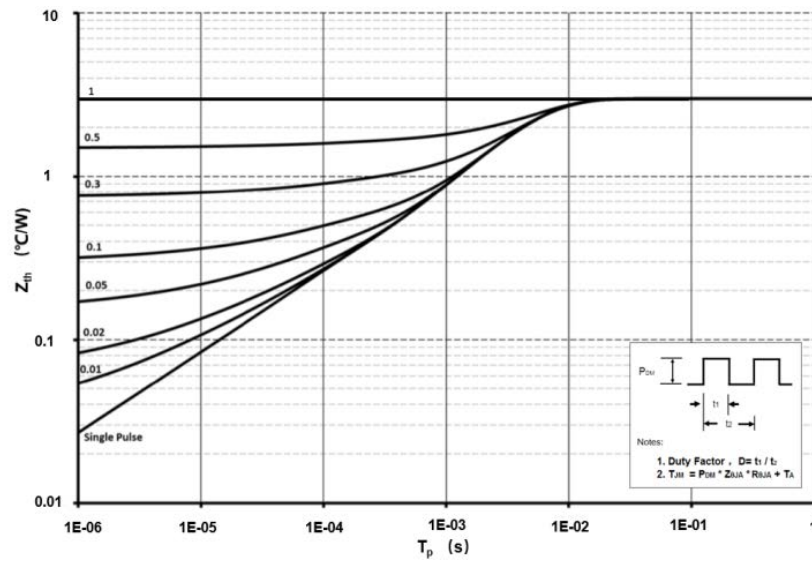


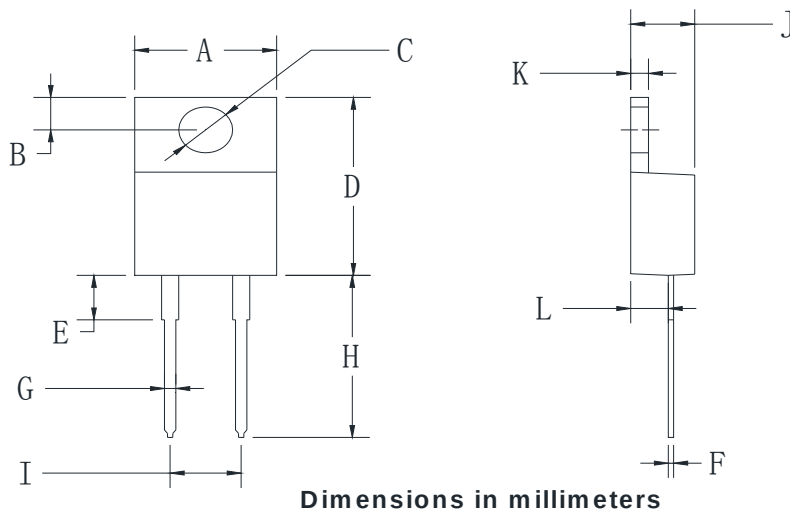


Fig 8: Transient Thermal Impandance



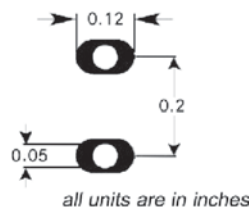


Package Information TO-220H-2L



TO-220H-2L		
Dim	Min	Max
A	9.5	10.9
B	2.22	3.27
C	3.34	4.31
D	14.5	15.5
E	3.16	4.46
F	0.28	0.64
G	0.68	0.94
H	13.06	14.62
I	4.55	5.60
J	4.04	5.1
K	1.14	1.4
L	2.14	3.19

Recommended Solder Pad Layout



TO-220H-2L



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