



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



Ordering Part Number	Package	Marking
C1D100065H	TO-247-2L	HC1D100065H





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 = 110°C T _C = 138°C	I _F	205 135 100	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}	450 360	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}	750 570	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	2812 1624	A ² s
Power dissipation T _C = 25°C T _C = 110°C	P _{tot}	405 175	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}	0.37	°C/W



Electrical Characteristic (at T_c = 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 =100A T _J =25°C T _J =175°C
Reverse Current	I _R	-	-	100	μA	V _R =650V T _J =25°C T _J =175°C
Total Capacitive Charge	Q _C	-	301	-	nC	V _R =400V, T _J =25°C $Q_C = \int_0^{V_R} C(V) dV$
Total Capacitance	C	-	5705	-	pF	T _J =25°C, f=1MHz V _R =0V V _R =200V V _R =400V

Characteristics Curve:

Fig 1: Forward Characteristics

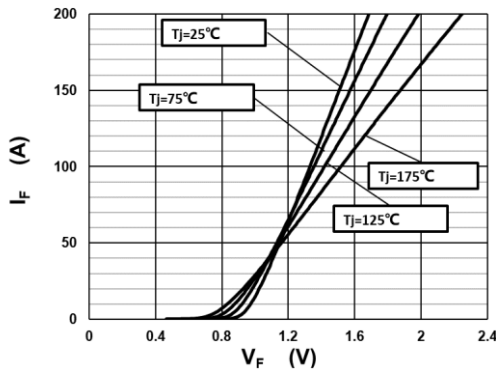


Fig 2: Reverse Characteristics

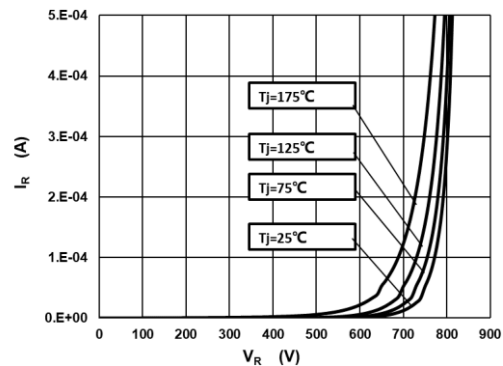


Fig 3: Current Derating

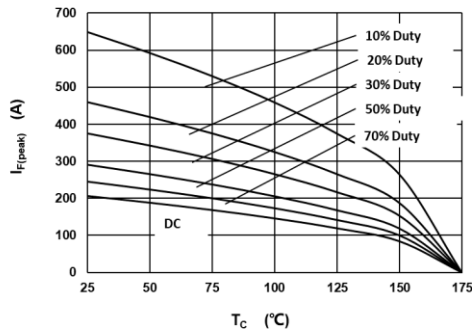


Fig 4: Power Derating

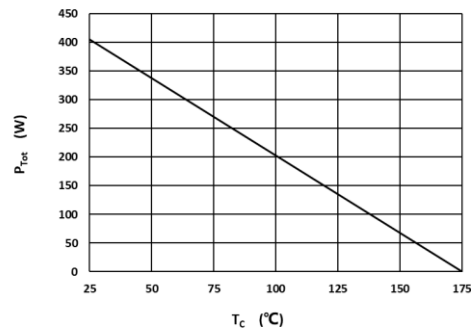




Fig 5: Capacitance vs. Reverse Voltage

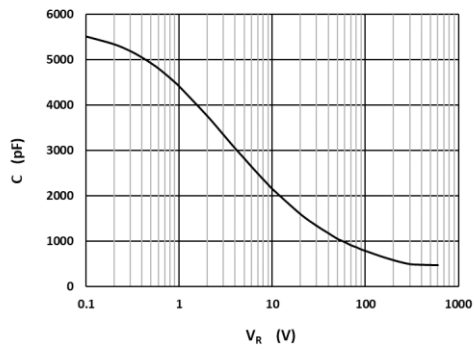


Fig 6: Reverse Charge vs. Reverse Voltage

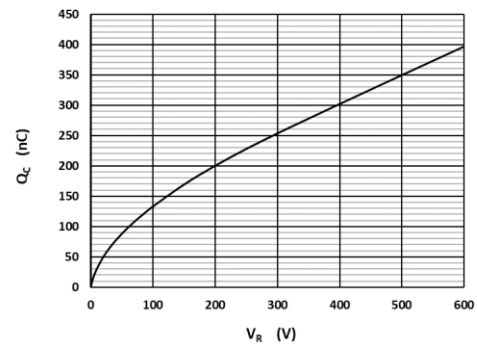
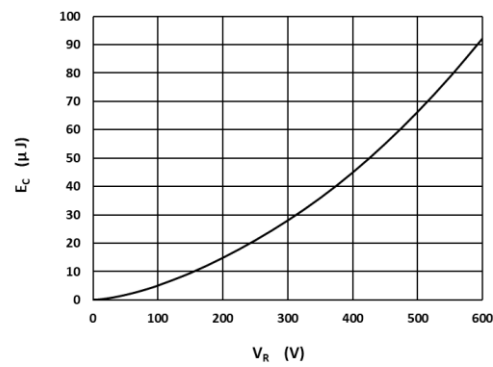


Fig 7: Typical Capacitance Stored Energy

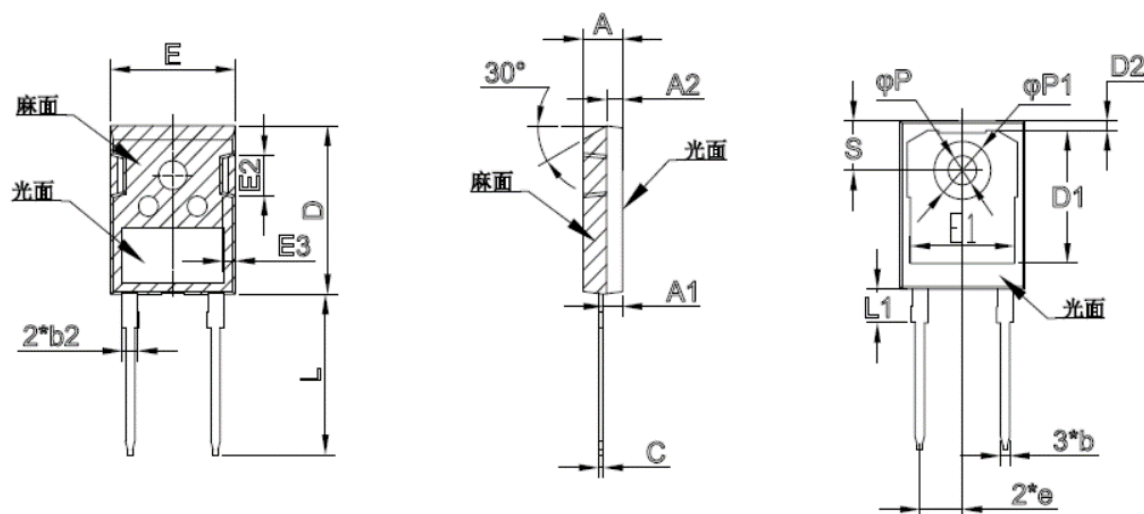




Package Dimensions

Package TO-247-2L

Unit:mm



	Min	Nom	Max		Min	Nom	Max
A	4.70	5.00	5.20	E1	13.06	13.26	13.56
A1	2.30		2.50	E2	4.90	5.00	5.10
A2	1.90	2.00	2.10	E3	1.50	1.60	1.70
b	1.10	1.20	1.30	e	5.34	5.44	5.54
b2		2.00		L	19.80	20.00	20.32
				L1		4.17	4.50
C	0.5	0.6	0.7	P	3.50	3.60	3.70
D	20.8	20.95	21.1	P1	7.00	7.19	7.40
D1		16.55		S	6.04	6.15	6.3
D2	0.95	1.17	1.35				
E	15.48	15.88	16.28				



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