



General Description

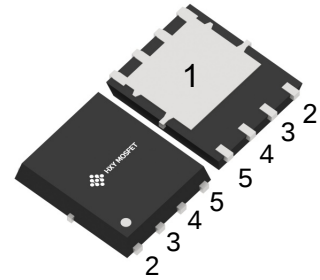
This product family offers state of the art performance. It is designed for high frequency applications where high efficiency and high reliability are required.

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



DFN5X6-8L



Ordering Part Number	Package	Marking
C1D06065N	DFN5X6-8L	HC1D06065N





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	23 12 6	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}	28 17	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}	48 43	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	11.4 9.1	A ² s
Power dissipation T _C = 25°C T _C = 110°C	P _{tot}	71 30	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}	2.10	°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	$I_F=6A$ $T_J=25^{\circ}C$
		-	1.5			$T_J=175^{\circ}C$
Reverse Current	I_R	-	-	50	μA	$V_R=650V$ $T_J=25^{\circ}C$
		-	-	200		$T_J=175^{\circ}C$
Total Capacitive Charge	Q_C	-	18	-	nC	$V_R=400V, T_J=25^{\circ}C$ $Q_C = \int_0^{V_R} C(V) dV$
Total Capacitance	C	-	358	-	pF	$T_J=25^{\circ}C, f=1MHz$ $V_R=0V$
		-	36	-		$V_R=200V$
		-	30	-		$V_R=400V$
		-		-		

Characteristics Curve

Fig 1: Forward Characteristics

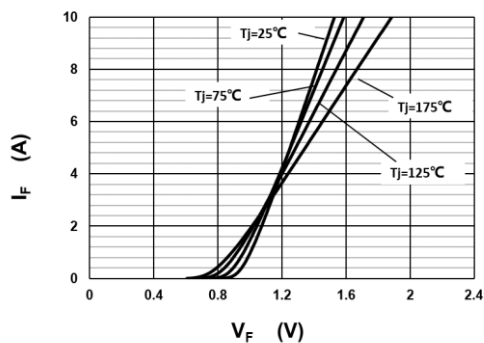


Fig 2: Reverse Characteristics

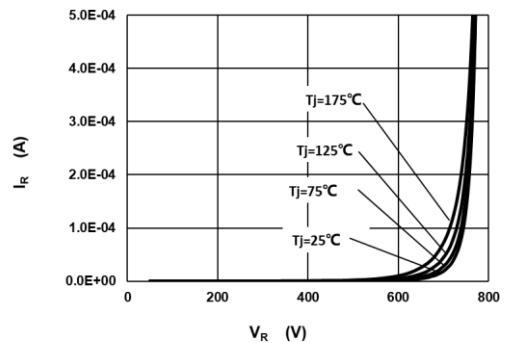




Fig 3: Current Derating

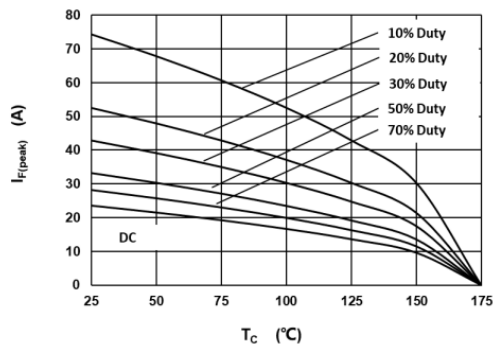


Fig 4: Power Derating

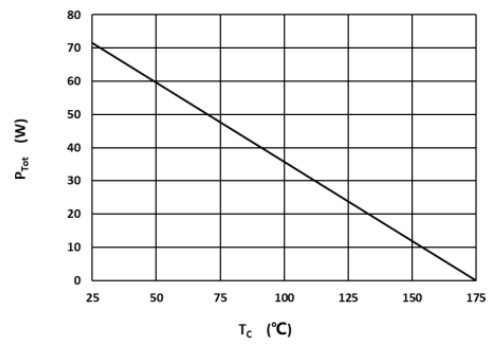


Fig 5: Capacitance vs. Reverse Voltage

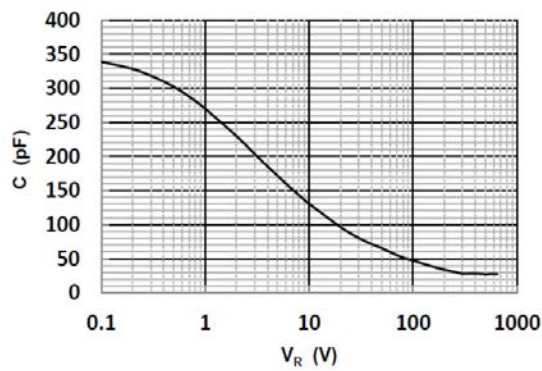


Fig 6: Reverse Charge vs. Reverse Voltage

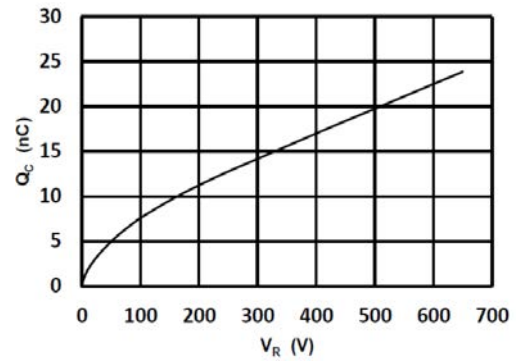


Fig 7: Typical Capacitance Stored Energy

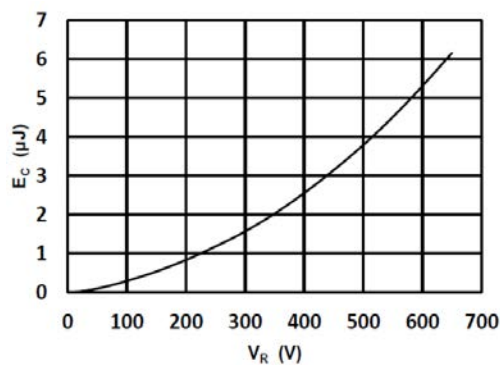
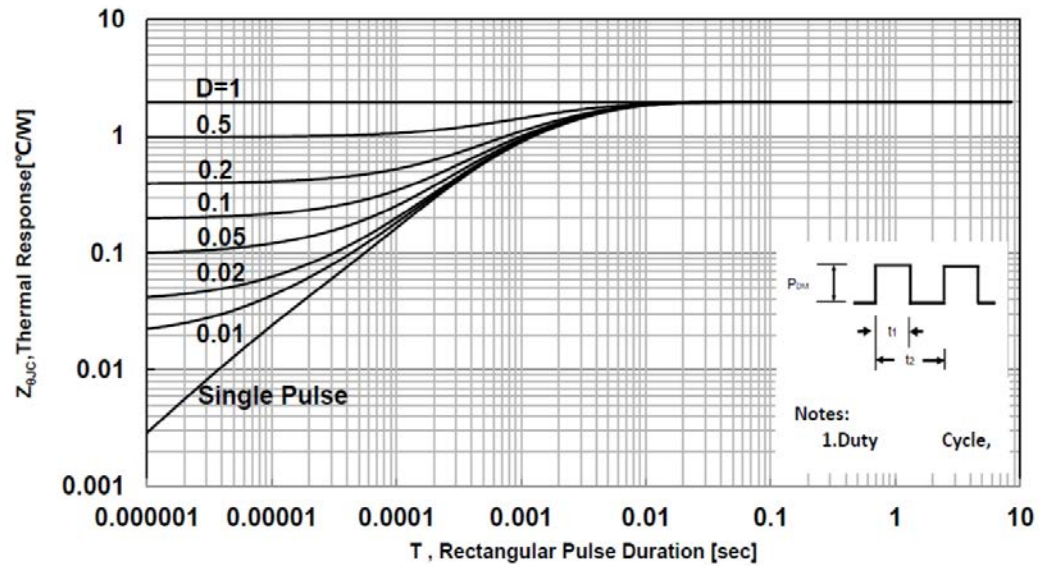




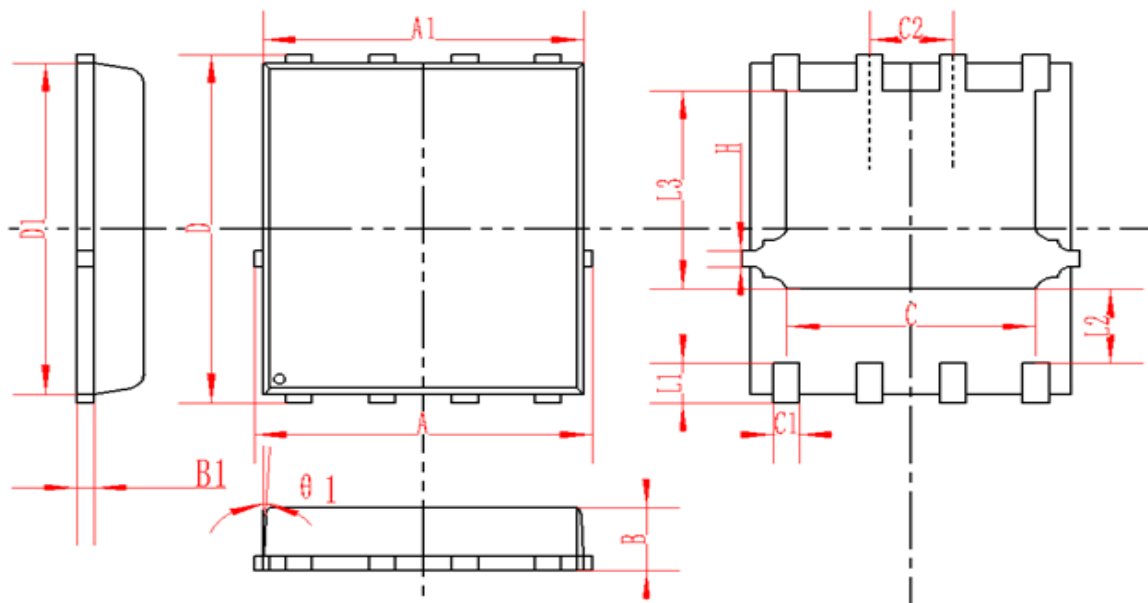
Fig 8: Transient Thermal Impandance





Package Dimensions

Package DFN5X6-8L



SYMBOL	MM			INCH		
	MIN	NOM	MAX	MIN	NOM	MAX
A	5.3	5.5	5.7	0.208	0.216	0.224
A1	5.1	5.2	5.3	0.2	0.204	0.209
D	5.98	6	6.02	0.235	0.236	0.237
D1	5.85	6.05	6.25	0.23	0.238	0.246
B	0.85	0.95	1.05	0.033	0.037	0.041
B1	0.254REF			0.010REF		
C	3.95	4	4.05	0.156	0.157	0.159
C1	0.35	0.4	0.45	0.014	0.016	0.018
C2	1.27TYP			0.5TYP		
θ1	8°	10°	12°	8°	10°	12°
L1	0.63	0.64	0.65	0.025	0.025	0.026
L2	1.2	1.3	1.4	0.047	0.051	0.055
L3	3.415	3.42	3.425	0.134	0.135	0.135
H	0.24	0.25	0.26	0.009	0.010	0.010



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