



## 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

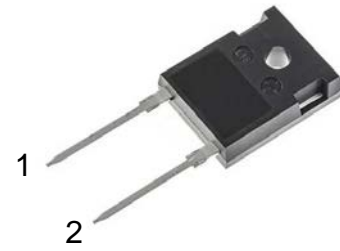
- Low conduction loss due to low  $V_F$
- Extremely low switching loss by tiny  $Q_C$
- Highly rugged due to better surge current
- Industrial standard quality and reliability

## Applications

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



Ordering Part Number	Package	Qty(PCS)
HSTPSC20065W	TO-247	30



TO-247-2L  
Package



## 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	$T_C=25^{\circ}\text{C}$ , $t_p=10\text{ ms}$ , Half Sine Wave, $D=1$ $T_C=110^{\circ}\text{C}$ , $t_p=10\text{ ms}$ , Half Sine Wave, $D=1$
$I_{FSM}$	Non-Repetitive Peak Forward Surge Current	150 120	A	$T_C=25^{\circ}\text{C}$ , $t_p=10\text{ms}$ , Half Sine Wave, $D=1$ $T_C=110^{\circ}\text{C}$ , $t_p=10\text{ ms}$ , 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	$\text{A}^2\text{s}$	$T_C = 25^{\circ}\text{C}$ , $t_p=10\text{ms}$ , Half Sine Pulse $T_C = 110^{\circ}\text{C}$ , $t_p=10\text{ms}$ , 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	$I_F=20A$ $T_J=25^{\circ}C$ $T_J=175^{\circ}C$
Reverse Current	$I_R$	-	2	40	$\mu A$	$V_R=650V$ $T_J=25^{\circ}C$ $T_J=175^{\circ}C$
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	$T_J=25^{\circ}C, f=1MHz$ $V_R=0V$ $V_R=200V$ $V_R=400V$

## 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

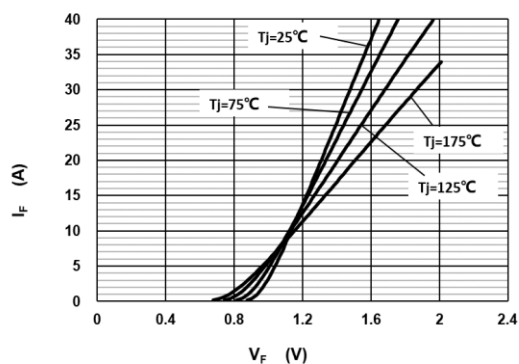


Fig 2: Reverse Characteristics

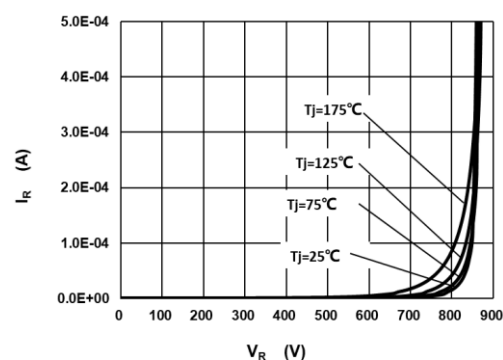




Fig 3: Current Derating

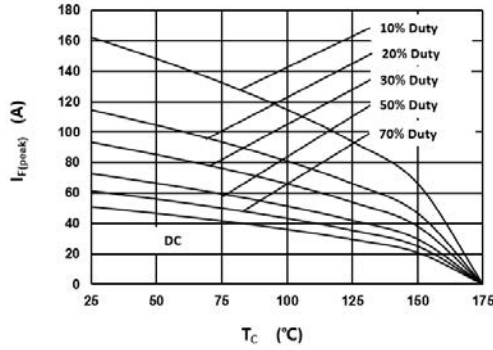


Fig 4: Power Derating

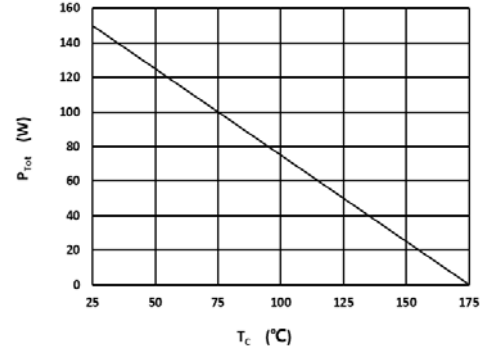


Fig 5: Capacitance vs. Reverse Voltage

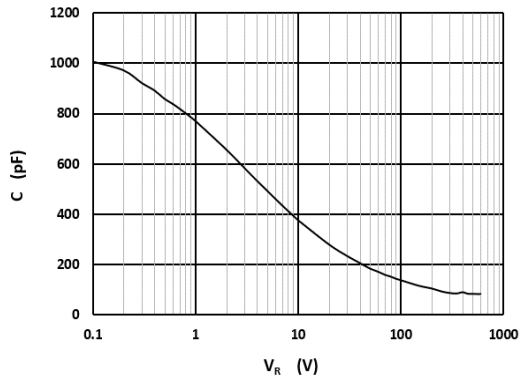


Fig 6: Reverse Charge vs. Reverse Voltage

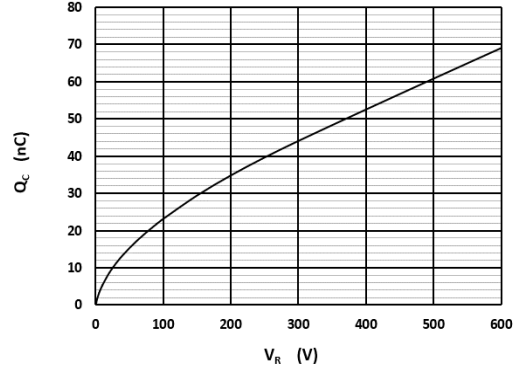


Fig 7: Typical Capacitance Stored Energy

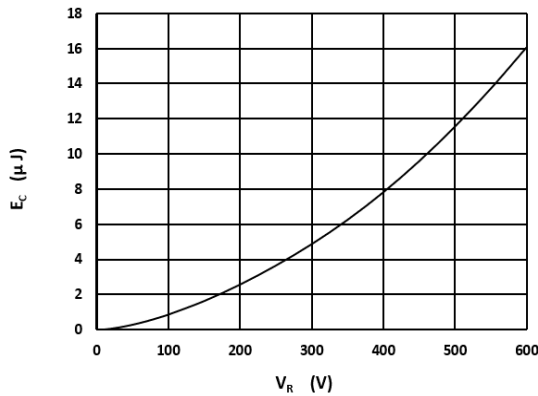
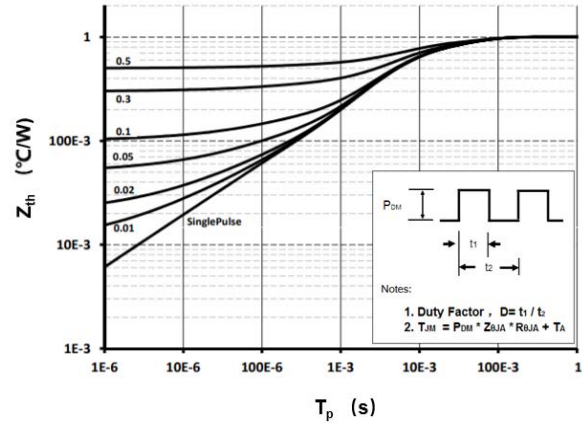


Fig 8: Transient Thermal Impedance

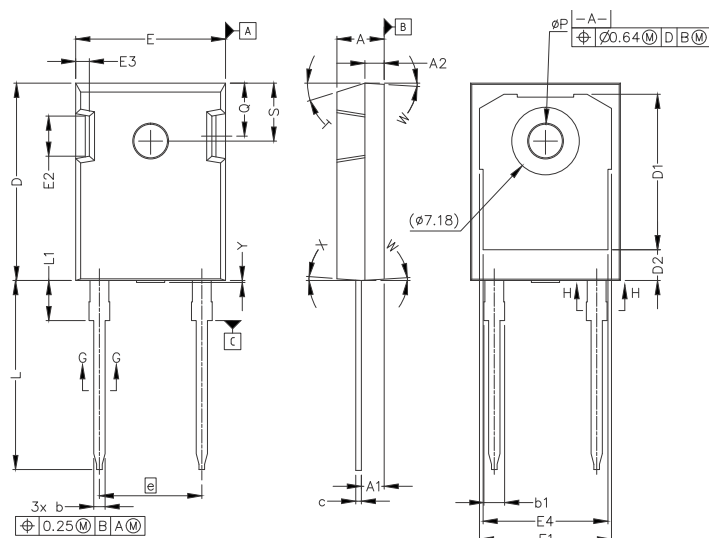




## Package Dimensions

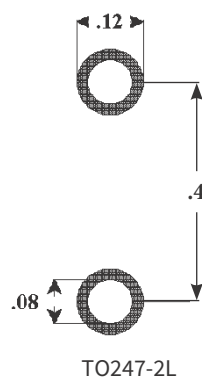
Package: TO247-2L

All dimensions in mm.



SYM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.83	5.21	.190	.205
A1	2.29	2.54	.090	.100
A2	1.91	2.16	.075	.085
b'	1.07	1.28	.042	.050
b	1.07	1.33	.042	.052
b1	1.91	2.41	.075	.095
b2	1.91	2.16	.075	.085
c'	0.55	0.65	.022	.026
c	0.55	0.68	.022	.027
D	20.80	21.10	.819	.831
D1	16.25	17.35	.640	.683
D2	2.86	3.16	.112	.124
E	15.75	16.13	.620	.635
E1	13.10	14.15	.516	.557
E2	3.68	5.10	.145	.201
E3	1.00	1.90	.039	.075
E4	12.38	13.43	.487	.529
e	10.88 BSC		.428 BSC	
L	19.81	20.32	.780	.800
L1	4.10	4.40	.161	.173
øP	3.51	3.65	.138	.144
Q	5.49	6.00	.216	.236
S	6.04	6.30	.238	.248
T	17.5° REF.			
W	3.5° REF.			
X	4° REF.			
Y	0	0.50	0	0.020

## Recommended Solder Pad Layout



*all units are in inches*



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