Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

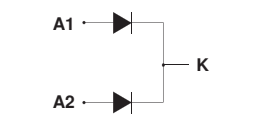
Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

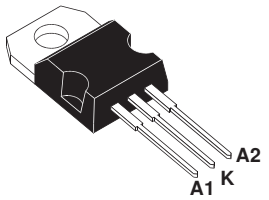
STPS16L40CT

LOW DROP POWER SCHOTTKY RECTIFIER

MAIN PRODUCTS CHARACTERISTICS

$I_{F(AV)}$	2 x 8 A
V_{RRM}	40 V
Tj (max)	150 °C
V_F (max)	0.45 V





TO-220AB

FEATURES AND BENEFITS

- LOW FORWARD VOLTAGE DROP FOR LESS POWER DISSIPATION
- NEGLIGIBLE SWITCHING LOSSES ALLOWING HIGH FREQUENCY OPERATION
- AVALANCHE CAPABILITY SPECIFIED

DESCRIPTION

Dual center tap Schottky barrier rectifier designed for high frequency Switched Mode Power Supplies and high frequency DC to DC converters.

Packaged in TO-220AB this device is intended for use in low voltage, high frequency converters, free-wheeling and polarity protection applications.

ABSOLUTE RATINGS (limiting values, per diode)

Symbol	Parameter			Value	Unit
V_{RRM}	Repetitive peak reverse voltage			40	V
$I_{F(RMS)}$	RMS forward current			30	A
$I_{F(AV)}$	Average forward current	Tc = 140°C δ = 0.5	Per diode	8	A
			Per device	16	A
I_{FSM}	Surge non repetitive forward current	tp = 10 ms sinusoidal		180	A
I_{RRM}	Repetitive peak reverse current	tp = 2 µs square F=1kHz		1	A
I_{RSM}	Non repetitive peak reverse current	tp = 100 µs square		2	A
P_{ARM}	Repetitive peak avalanche power	tp = 1µs Tj = 25°C		4000	W
T_{stg}	Storage temperature range			- 65 to + 150	°C
Tj	Maximum operating junction temperature *			150	°C
dV/dt	Critical rate of rise of reverse voltage			10000	V/µs

* : $\frac{dPtot}{dTj} < \frac{1}{Rth(j-a)}$ thermal runaway condition for a diode on its own heatsink

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	Junction to case	Per diode Total	2.2 1.3	°C/W
$R_{th(c)}$		Coupling	0.3	

When the diodes 1 and 2 are used simultaneously :
Δ Tj(diode 1) = P(diode1) x $R_{th(j-c)}$(Per diode) + P(diode 2) x $R_{th(c)}$

STATIC ELECTRICAL CHARACTERISTICS (per diode)

Symbol	Parameter	Tests Conditions		Min.	Typ.	Max.	Unit
I_R *	Reverse leakage current	Tj = 25°C	$V_R = V_{RRM}$			0.7	mA
		Tj = 100°C			15	35	mA
V_F *	Forward voltage drop	Tj = 25°C	I_F = 8 A			0.5	V
		Tj = 125°C	I_F = 8 A		0.39	0.45	
		Tj = 25°C	I_F = 16 A			0.63	
		Tj = 125°C	I_F = 16 A		0.55	0.64	

Pulse test : * tp = 380 µs, δ < 2%

To evaluate the conduction losses use the following equation :
$P = 0.26 \times I_{F(AV)} + 0.024\ I_F{}^2{}_{(RMS)}$

Fig. 1: Average forward power dissipation versus average forward current (per diode).

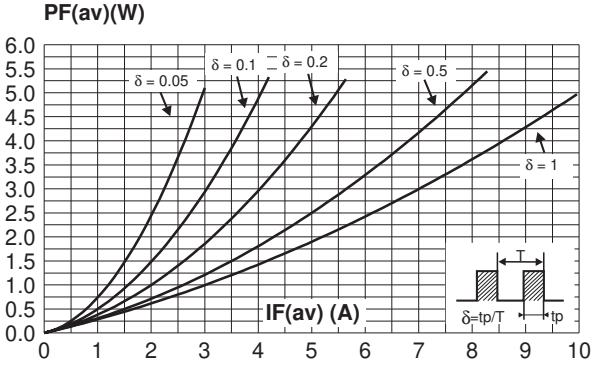


Fig. 2: Average current versus ambient temperature (δ = 0.5) (per diode).

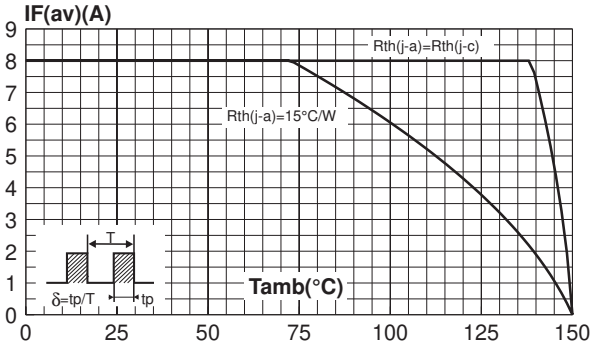


Fig. 3: Normalized avalanche power derating versus pulse duration.

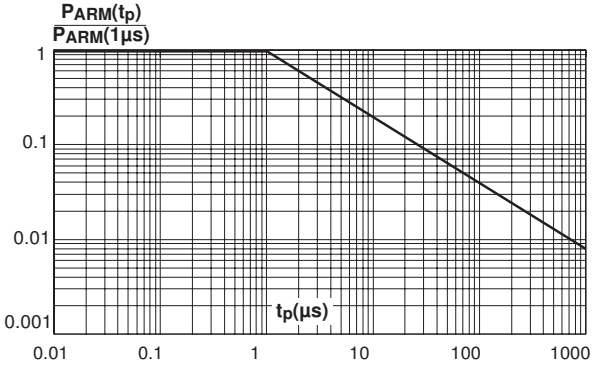


Fig. 4: Normalized avalanche power derating versus junction temperature.

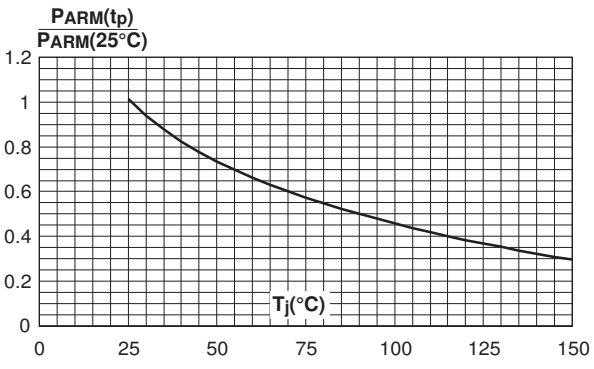


Fig. 5: Non repetitive surge peak forward current versus overload duration (maximum values) (per diode).

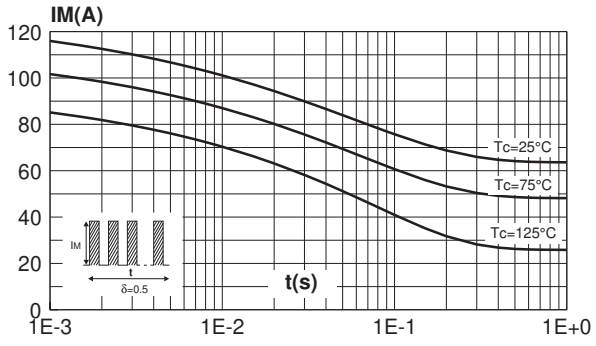


Fig. 6: Relative variation of thermal impedance junction to case versus pulse duration .

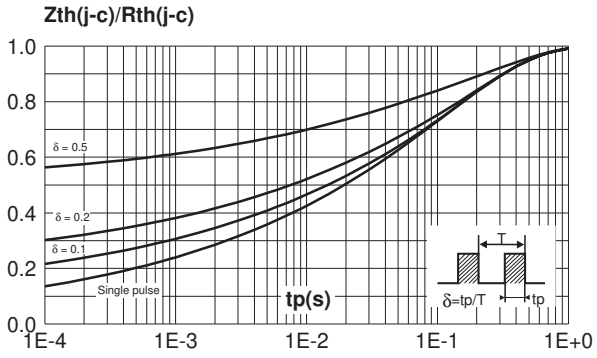


Fig. 7: Reverse leakage current versus reverse voltage applied (typical values) (per diode).

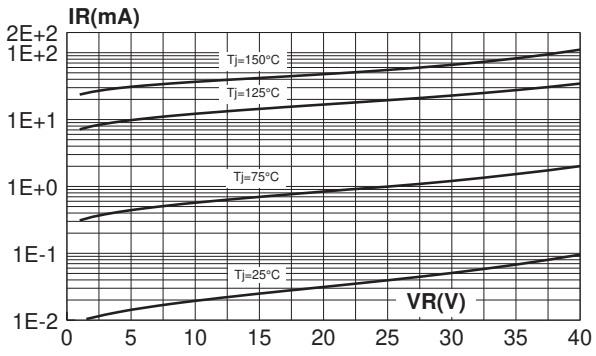


Fig. 8: Junction capacitance versus reverse voltage applied (typical values) (per diode).

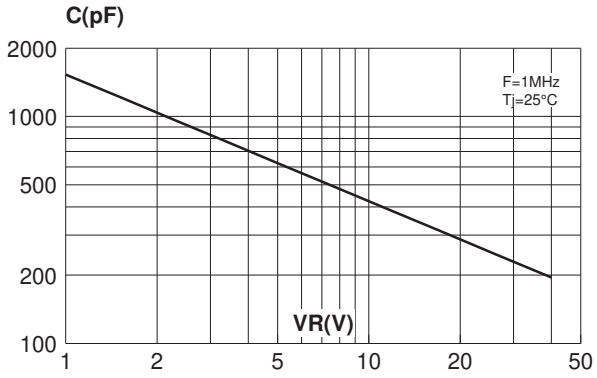
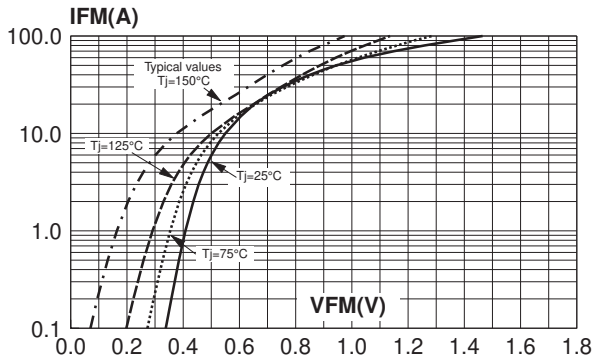
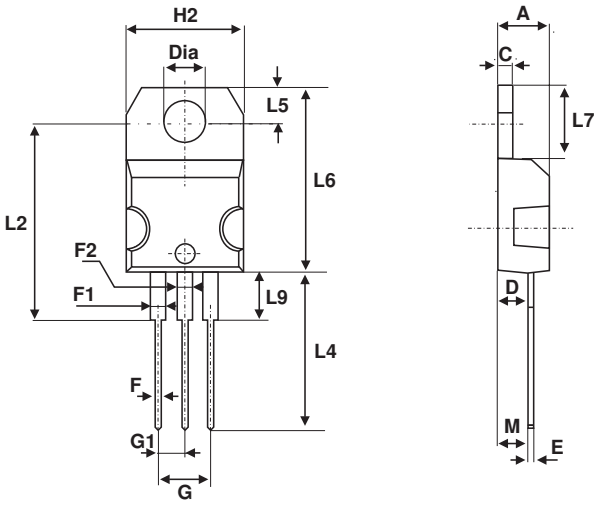


Fig. 9: Forward voltage drop versus forward current (maximum values) (per diode).



PACKAGE MECHANICAL DATA

TO-220AB



REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.40	4.60	0.173	0.181
C	1.23	1.32	0.048	0.051
D	2.40	2.72	0.094	0.107
E	0.49	0.70	0.019	0.027
F	0.61	0.88	0.024	0.034
F1	1.14	1.70	0.044	0.066
F2	1.14	1.70	0.044	0.066
G	4.95	5.15	0.194	0.202
G1	2.40	2.70	0.094	0.106
H2	10	10.40	0.393	0.409
L2	16.4 typ.		0.645 typ.	
L4	13	14	0.511	0.551
L5	2.65	2.95	0.104	0.116
L6	15.25	15.75	0.600	0.620
L7	6.20	6.60	0.244	0.259
L9	3.50	3.93	0.137	0.154
M	2.6 typ.		0.102 typ.	
Diam.	3.75	3.85	0.147	0.151

Ordering type	Marking	Package	Weight	Base qty	Delivery mode
STPS16L40CT	STPS16L40CT	TO-220AB	2g	50	Tube

- EPOXY MEETS UL94,V0
- COOLING METHOD : C
- RECOMMENDED TORQUE VALUE : 0.55 M.N
- MAXIMUM TORQUE VALUE : 0.70 M.N