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

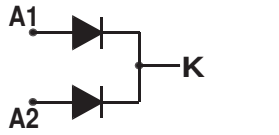
Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

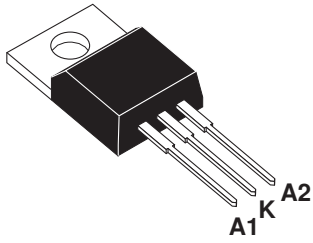
STPS20100CT

HIGH VOLTAGE POWER SCHOTTKY RECTIFIER

MAIN PRODUCT CHARACTERISTICS

$I_{F(AV)}$	2 x 10A
V_{RRM}	100V
V_F (max)	0.7V
Tj (max)	175°C





TO-220AB
STP20100CT

FEATURES

- Negligible switching losses
- Low forward voltage drop
- Low capacitance
- High reverse avalanche surge capability

DESCRIPTION

High voltage dual Schottky rectifier suited for switchmode power supplies and other power converters. Packaged in TO-220AB, this device is intended for use in medium voltage operation, and particularly, in high frequency circuitries where low switching losses and low noise are required.

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter			Value	Unit
V_{RRM}	Repetitive peak reverse voltage			100	V
$I_{F(RMS)}$	RMS forward current		Per diode	30	A
$I_{F(AV)}$	Average forward current $\delta = 0.5$	Tc=110°C V_R = 60V	Per diode Per device	10 20	A A
I_{FSM}	Surge non repetitive forward current	tp=10ms sinusoidal	Per diode	200	A
I_{RRM}	Repetitive peak reverse current	tp=2µs F=1KHz	Per diode	1	A
I_{RSM}	Non repetitive peak reverse current	tp=100µs	Per diode	1	A
Tstg	Storage temperature range			- 65 to + 175	°C
Tj	Maximum junction temperature (*)			175	°C
dV/dt	Critical rate of rise of reverse voltage			1000	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
Rth (j-c)	Junction to case	Per diode	1.6	°C/W
		Total	0.9	
Rth (c)	Coupling		0.15	°C/W

When the diodes 1 and 2 are used simultaneously :
Tj-Tc(diode 1)=P(diode1) x Rth(j-c)(Per diode) + P(diode 2) x Rth(c)

ELECTRICAL CHARACTERISTICS (Per diode)

STATIC CHARACTERISTICS

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_R*	Reverse leakage current	$V_R = V_{RRM}$	Tj = 25°C			150	µA
			Tj = 125°C			100	mA
V_F**	Forward voltage drop	IF = 20A	Tj = 125°C			0.85	V
		IF = 10A	Tj = 125°C		0.60	0.70	
		IF = 20A	Tj = 25°C			0.95	

Pulse test : * tp = 5 ms, duty cycle < 2 %
** tp = 380 µs, duty cycle < 2 %

To evaluate the conduction losses use the following equation :
$P = 0.55 \times I_{F(AV)} + 0.015 \times I_{F^2(RMS)}$

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

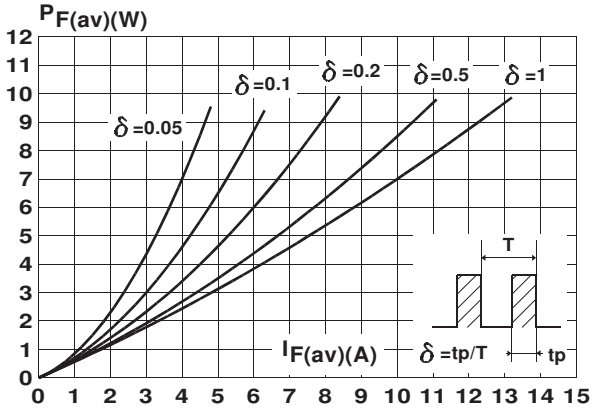


Fig. 2 : Average current versus ambient temperature. (duty cycle : 0.5) (Per diode)

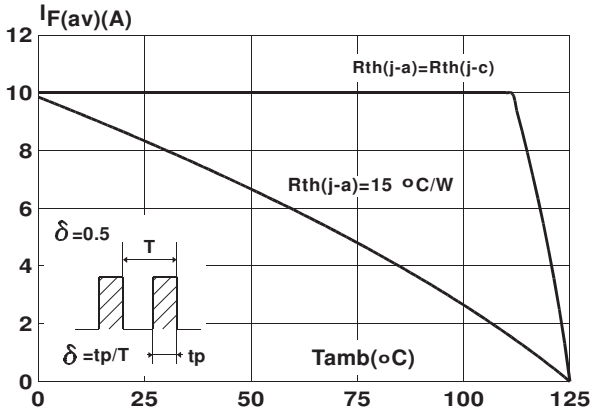


Fig. 3 : Non repetitive surge peak forward current versus overload duration.
(Maximum values) (Per diode)

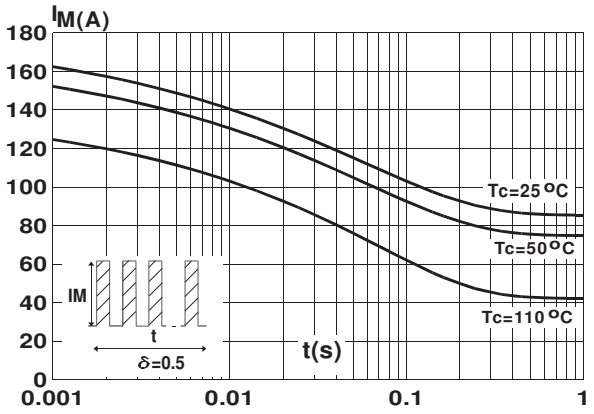


Fig. 4 : Relative variation of thermal transient impedance junction to case versus pulse duration.

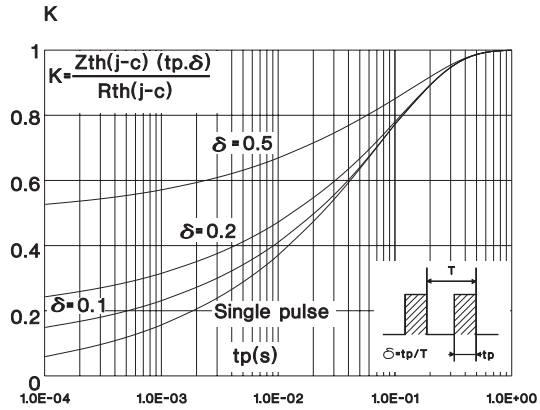


Fig. 5 : Reverse leakage current versus reverse voltage applied. (Typical values) (Per diode)

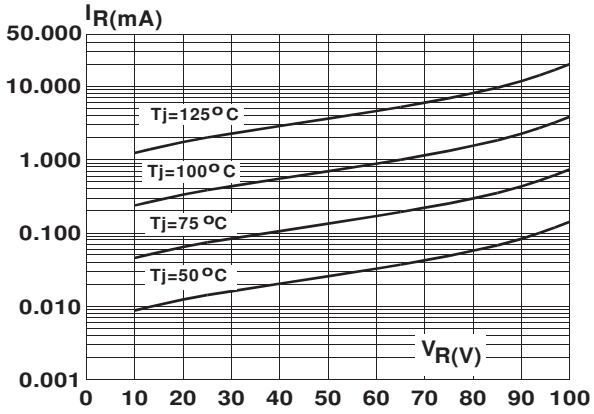


Fig. 6 : Junction capacitance versus reverse voltage applied. (Typical values) (Per diode)

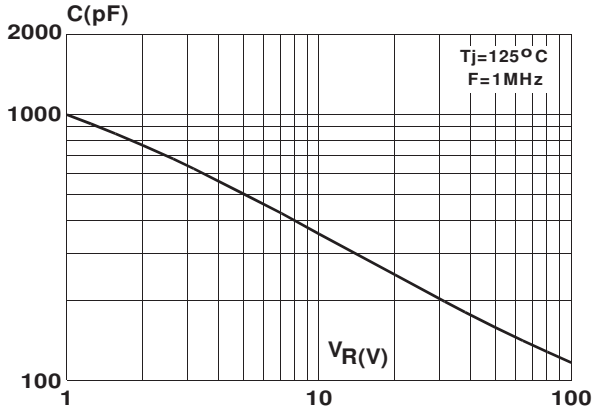
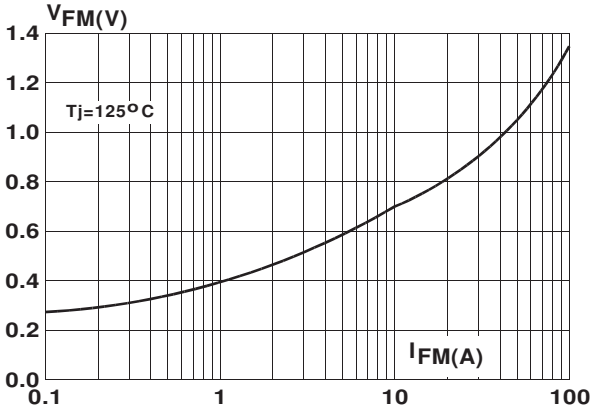
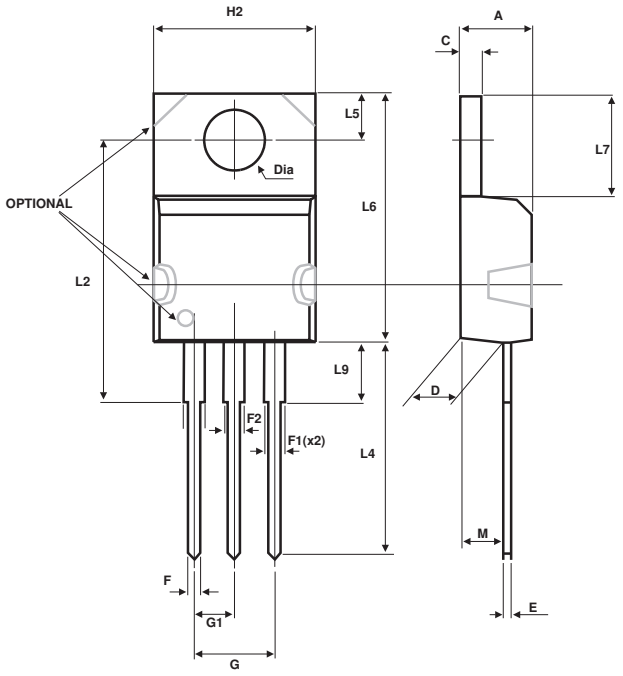


Fig. 7 : Forward voltage drop versus forward current. (Maximum values) (Per diode)



PACKAGE MECHANICAL DATA

TO-220AB (JEDEC outline)



REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.30	4.60	0.169	0.181
C	1.22	1.32	0.048	0.052
D	2.40	2.72	0.094	0.107
E	0.33	0.70	0.013	0.028
F	0.61	0.93	0.024	0.037
F1	1.14	1.70	0.045	0.067
F2	1.14	1.70	0.045	0.067
G	4.95	5.15	0.195	0.202
G1	2.40	2.70	0.094	0.106
H2	10.00	10.40	0.394	0.409
L2	16.00 Typ.		0.630 Typ.	
L4	13.00	14.00	0.512	0.551
L5	2.65	2.95	0.104	0.116
L6	14.80	15.75	0.583	0.620
L7	6.20	6.60	0.244	0.260
L9	3.40	3.94	0.134	0.155
M	2.60 Typ.		0.102 Typ.	
Dia.	3.75	3.89	0.148	0.153

Ordering type	Marking	Package	Weight	Base qty	Delivery mode
STPS20100CT	STPS20100CT	TO-220AB	2.23g	50	Tube

- Cooling method : by conduction (C)
- Recommended torque value : 0.55N.m.
- Maximum torque value : 0.7N.m.
- Epoxy meets UL94,V0