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!

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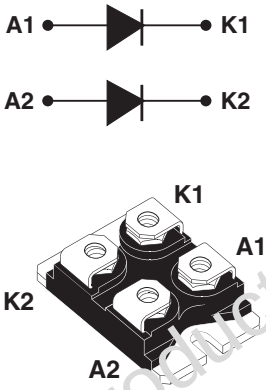
STTH6102TV

HIGH EFFICIENCY ULTRAFAST DIODE

MAIN PRODUCT CHARACTERISTICS

$I_{F(AV)}$	2 x 30 A
V_{RRM}	200 V
Tj (max)	150 °C
V_F (typ)	0.70 V
t_{rr} (typ)	25 ns



ISOTOP
STTH6102TV1

FEATURES AND BENEFITS

- Suited for welding and high power equipment
- Very low forward losses
- Low recovery times
- High surge current capability
- Insulated:
  Insulating voltage = 2500 V_{RMS}
  Capacitance < 45 pF
- Low leakage current

DESCRIPTION

Dual center tap rectifier suited for welding equipment and high power industrial application. Packaged in ISOTOP, this device is intended for use in the secondary rectification of power converters.

ABSOLUTE RATINGS (limiting values, per diode)

Symbol	Parameter			Value	Unit
V_{RRM}	Repetitive peak reverse voltage			200	V
$I_{F(RMS)}$	RMS forward current		Per diode	80	A
$I_{F(AV)}$	Average forward current δ =0.5	Tc = 115°C	Per diode	30	A
I_{FSM}	Surge non repetitive forward current	tp = 10 ms Sinusoidal	per diode	400	A
T_{stg}	Storage temperature range			- 55 + 150	°C
Tj	Maximum operating junction temperature			150	°C

THERMAL PARAMETERS

Symbol	Parameter		Maximum	Unit
$R_{th\ (j-c)}$	Junction to case	Per diode	1.2	°C/W
		Per device	0.65	
$R_{th\ (j-c)}$	Coupling		0.1	°C/W

When the diodes 1 and 2 are used simultaneously:
Δ Tj (diode1) = P(diode1) x $R_{th(j-c)}$ (per diode) + P(diode2) x $R_{th(c)}$

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Tests conditions		Min.	Typ.	Max.	Unit
I_R*	Reverse leakage current	Tj = 25°C	$V_R = V_{RRM}$			50	µA
		Tj = 125°C			25	250	
V_F**	Forward voltage drop	Tj = 25°C	I_F = 30 A			1.05	V
		Tj = 25°C	I_F = 60 A			1.15	
		Tj = 150°C	I_F = 30 A		0.70	0.81	
		Tj = 150°C	I_F = 60 A			0.96	

Pulse test: * tp = 5ms, δ < 2%

** tp = 380µs, δ < 2%

To evaluate the maximum conduction losses use the following equation :
$P = 0.66 \times I_{F(AV)} + 0.005\ I_{F\ (RMS)}^2$

DYNAMIC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Tests conditions		Min.	Typ.	Max.	Unit
t_{rr}	Reverse recovery time	Tj = 25°C	I_F = 1 A V_R = 30V dI_F/dt = 200 A/µs		25	30	ns
I_{RM}	Reverse recovery current	Tj = 125°C	I_F = 30 A V_R = 160V dI_F/dt = 200 A/µs		6.8	8.8	A
t_{fr}	Forward recovery time	Tj = 25°C	I_F = 30 A dI_F/dt = 200 A/µs $V_{FR} = 1.1 \times V_F$max			220	ns
V_{FP}	Forward recovery voltage	Tj = 25°C	I_F = 30 A dI_F/dt = 200 A/µs		2.5		V

Fig. 1: Peak current versus duty cycle (per diode).

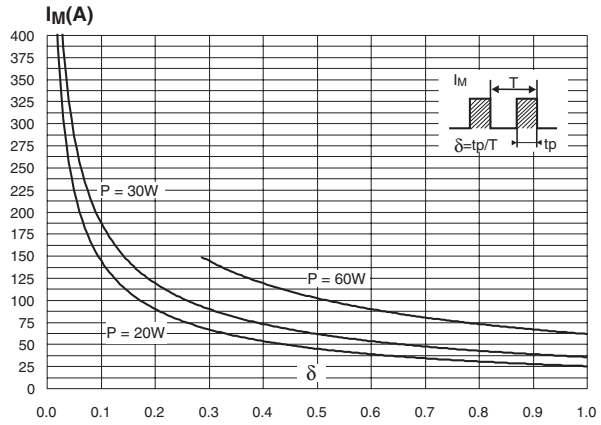


Fig. 2-1: Forward voltage drop versus forward current (typical values, per diode).

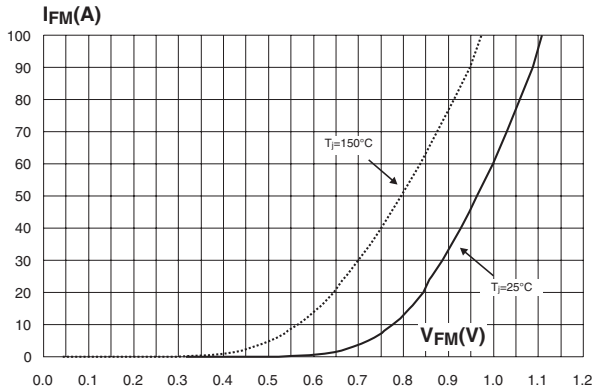


Fig. 2-2: Forward voltage drop versus forward current (maximum values, per diode).

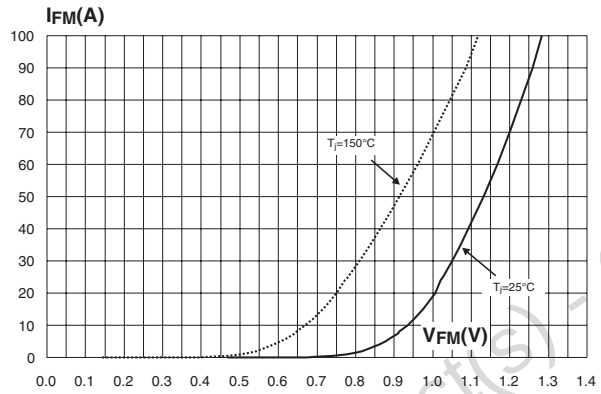


Fig. 3: Relative variation of thermal impedance junction to case versus pulse duration.

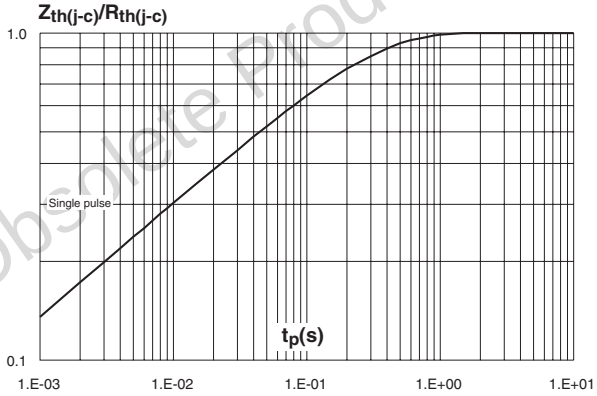


Fig. 4: Junction capacitance versus reverse voltage applied (typical values, per diode).

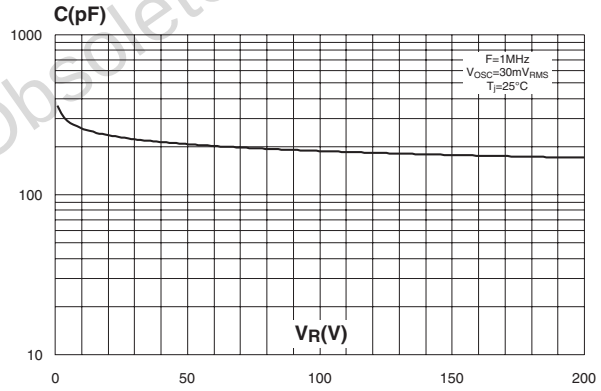


Fig. 5: Reverse recovery charges versus dI_F/dt (typical values, per diode).

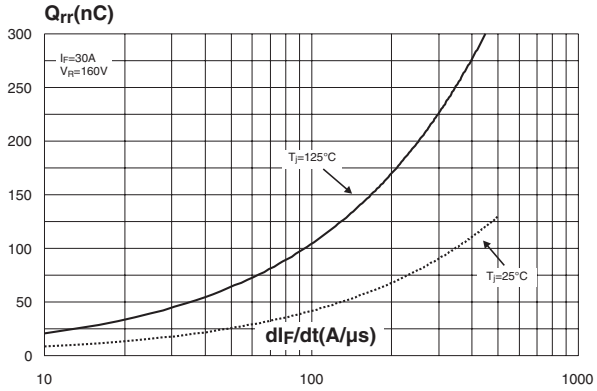


Fig. 6: Reverse recovery time versus dI_F/dt (typical values, per diode).

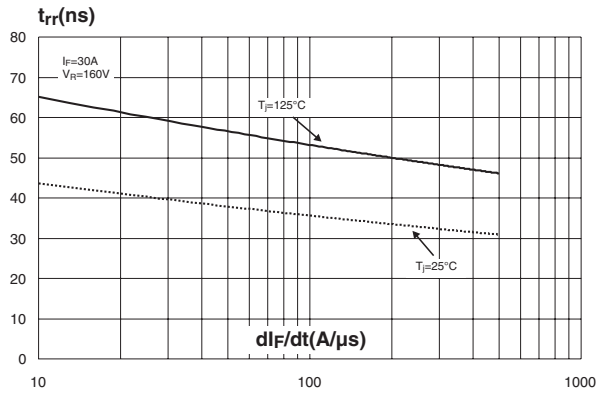


Fig. 7: Peak reverse recovery current versus dI_F/dt (typical values, per diode).

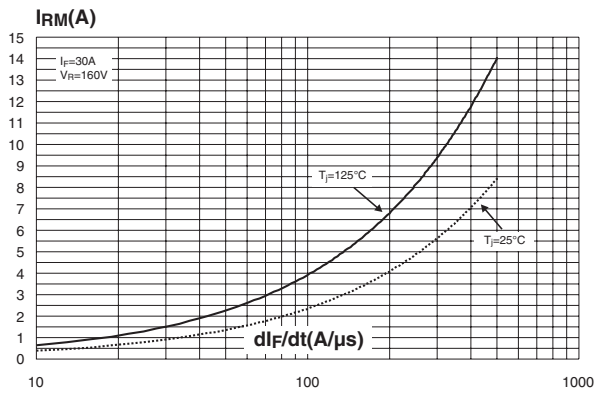
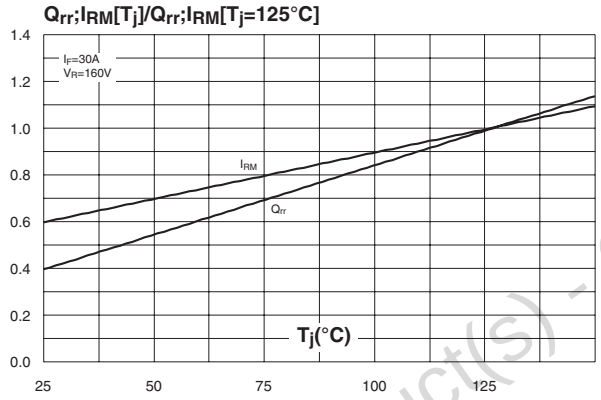
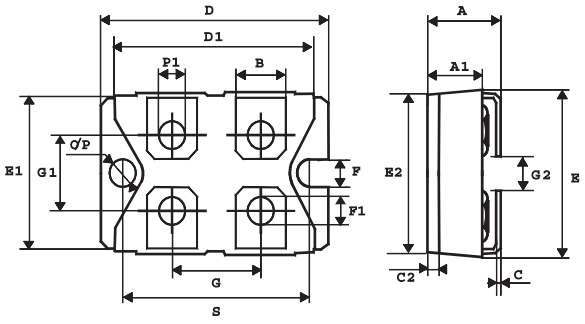


Fig. 8: Dynamic parameters versus junction temperature.



PACKAGE MECHANICAL DATA

ISOTOP



REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	11.80	12.20	0.465	0.480
A1	8.90	9.10	0.350	0.358
B	7.8	8.20	0.307	0.323
C	0.75	0.85	0.030	0.033
C2	1.95	2.05	0.077	0.081
D	37.80	38.20	1.488	1.504
D1	31.50	31.70	1.240	1.248
E	25.15	25.50	0.990	1.004
E1	23.85	24.15	0.939	0.951
E2	24.80 typ.		0.976 typ.	
G	14.90	15.10	0.587	0.594
G1	12.60	12.80	0.496	0.504
G2	3.50	4.30	0.138	0.169
F	4.10	4.30	0.161	0.169
F1	4.60	5.00	0.181	0.197
P	4.00	4.30	0.157	0.69

Ordering code	Marking	Package	Weight	Base qty	Delivery mode
STTH6102TV1	STTH6102TV1	ISOTOP	27 g (without screws)	10 (with screws)	Tube