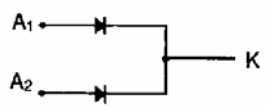
SGS-THOMSON MICROELECTRONICS

STPS220CE
STPS230CE
STPS240CE

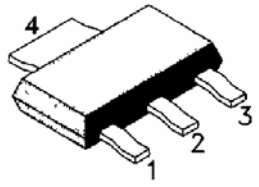
SCHOTTKY RECTIFIER

PRELIMINARY DATA

- VERY SMALL CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD VOLTAGE DROP
- LOW THERMAL RESISTANCE
- EXTREMELY FAST SWITCHING
- SURFACE MOUNTED DEVICE



1 = A_1
2 = K
3 = A_2
4 = K



SOT 223
(Plastic)

DESCRIPTION

Dual center tap schottky rectifier suited for switch-mode power supply and high frequency DC to DC converters.

Packaged in SOT 223, this device is intended for surface mounting and use in low voltage, high frequency inverters, free wheeling and polarity protection applications.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter			Value	Unit
$I_{F(RMS)}$	RMS Forward Current		Per diode	1.4	A
$I_{F(AV)}$	Average Forward Current	T_L = 135°C δ = 0.5	Per diode Per device	1 2	A
I_{FSM}	Surge Non Repetitive Forward Current	tp = 10 ms Sinusoidal	Per diode	10	A
I_{RRM}	Peak Repetitive Reverse Current	tp = 2 µs F = 1KHz	Per diode	1	A
Tstg Tj	Storage and Junction Temperature Range			- 65 to + 150 - 65 to + 150	°C
dV/dt	Critical Rate of Rise of Reverse Voltage			1000	V/µs

Symbol	Parameter	STPS			Unit
		220CE	230CE	240CE	
V_{RRM}	Repetitive Peak Reverse Voltage	20	30	40	V

THERMAL RESISTANCE

Symbol	Parameter		Value	Unit
$R_{TH(j-l)}$	Junction to Tab for D.C	Total	12	°C/W
		Per diode	20	
$R_{TH(j-a)}$	Junction to Ambient with 5cm² Copper Surface Under Tab		55	
$R_{TH(c)}$	Coupling		5	°C/W

When the diodes 1 and 2 are used simultaneously :
ΔT_J(diode 1) = P(diode1) x R_{TH}(Per diode) + P(diode 2) x $R_{TH(c)}$

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS (Per diode)

Symbol	Tests Conditions		Min.	Typ.	Max.	Unit
I_R **	T_j = 25°C	$V_R = V_{RRM}$			500	µA
	T_j = 100°C				10	mA
V_F *	T_j = 125°C	I_F = 2 A			0.72	V
	T_j = 125°C	I_F = 1 A			0.55	
	T_j = 25°C	I_F = 2 A			0.81	

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

To evaluate the conduction losses use the following equation :
$P = 0.38 \times I_{F(AV)} + 0.17\ I_{F^2(RMS)}$

Voltage (V)	20	30	40
Marking	T22	T23	T24