



SOT-23



Pin Definition:

1. Gate
2. Source
3. Drain

PRODUCT SUMMARY

V_{DS} (V)	$R_{DS(on)}$ (m Ω)	I_D (A)
100	250 @ $V_{GS} = 10V$	1.5

General Description

The TSM2328 utilized advanced processing techniques to achieve the lowest possible On-Resistance, extremely efficient and cost-effectiveness device.

The TSM2328 is universally used for all commercial-industrial applications

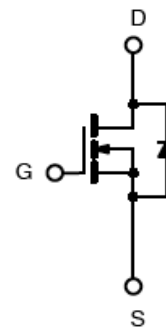
Features

- Low $R_{DS(ON)}$ 250m Ω (Max.)
- Low gate charge typical @ 11.1nC (Typ.)
- High performance trench technology

Ordering Information

Part No.	Package	Packing
TSM2328CX RF	SOT-23	3Kpcs / 7" Reel

Block Diagram



N-Channel MOSFET

Absolute Maximum Rating ($T_a = 25^\circ C$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	1.5	A
Pulsed Drain Current *	I_{DM}	6	A
Continuous Source Current (Diode Conduction)	I_S	0.6	A
Total Power Dissipation @ $T_A = 25^\circ C$	P_D	1.38	W
Operating Junction Temperature	T_J	150	$^\circ C$
Storage Temperature Range	T_{STG}	-55 to +150	$^\circ C$

* Limited by maximum junction temperature

Thermal Performance

Parameter	Symbol	Limit	Unit
Thermal Resistance - Junction to Foot	$R_{\theta_{JF}}$	55	$^\circ C/W$
Thermal Resistance - Junction to Ambient	$R_{\theta_{JA}}$	100	$^\circ C/W$

Note 1: Surface mounted on 1" x 1" FR4

Note 2: Pules width limited by maximum junction temperature

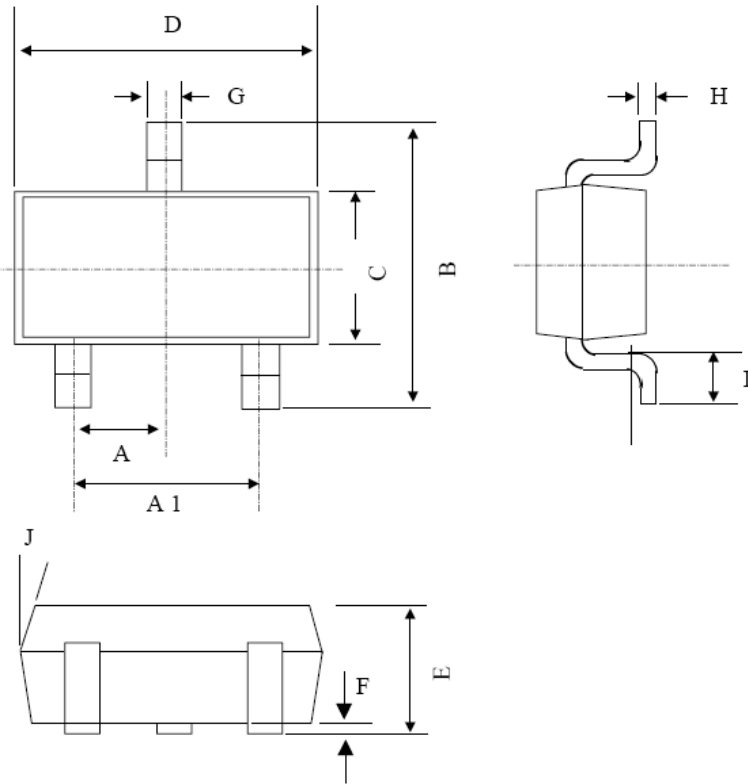
Electrical Specifications (Ta = 25°C unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = 250\mu A$	BV_{DSS}	100	--	--	V
Drain-Source On-State Resistance	$V_{GS} = 10V, I_D = 1.5A$	$R_{DS(ON)}$	--	--	250	mΩ
Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\mu A$	$V_{GS(TH)}$	1.0	--	2.5	V
Zero Gate Voltage Drain Current	$V_{DS} = 80V, V_{GS} = 0V$	I_{DSS}	--	--	1	μA
Gate Body Leakage	$V_{GS} = \pm 20V, V_{DS} = 0V$	I_{GSS}	--	--	±100	nA
On-State Drain Current	$V_{DS} = 5V, V_{GS} = 10V$	$I_{D(ON)}$	6	--	--	A
Forward Transfer Conductance	$V_{DS} = 15V, I_D = 1.5A$	g_{fs}	--	4	--	S
Diode Forward Voltage	$I_S = 1A, V_{GS} = 0V$	V_{SD}	--	1.2	--	V
Dynamic ⁽¹⁾						
Total Gate Charge	$V_{DS} = 80V, I_D = 1.5A,$ $V_{GS} = 5V$	Q_g	--	11.1	--	nC
Gate-Source Charge		Q_{gs}	--	4.4	--	
Gate-Drain Charge		Q_{gd}	--	3	--	
Input Capacitance	$V_{DS} = 25V, V_{GS} = 0V,$ $f = 1.0MHz$	C_{iss}	--	975	--	pF
Output Capacitance		C_{oss}	--	38	--	
Reverse Transfer Capacitance		C_{rss}	--	27	--	
Switching ⁽²⁾						
Turn-On Delay Time	$V_{DD} = 30V, I_D = 1A,$ $V_{GEN} = 10V, R_L = 30\Omega,$ $R_G = 6\Omega$	$t_{d(on)}$	--	9	--	nS
Turn-On Rise Time		t_r	--	9.4	--	
Turn-Off Delay Time		$t_{d(off)}$	--	26.8	--	
Turn-Off Fall Time		t_f	--	2.6	--	

Note 1: Pulse test: pulse width ≤300μS, duty cycle ≤2%

Note 2: Guaranteed by design, not subject to production testing

SOT-23 Mechanical Drawing



SOT-23 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX.
A	0.95 BSC		0.037 BSC	
A1	1.9 BSC		0.074 BSC	
B	2.60	3.00	0.102	0.118
C	1.40	1.70	0.055	0.067
D	2.80	3.10	0.110	0.122
E	1.00	1.30	0.039	0.051
F	0.00	0.10	0.000	0.004
G	0.35	0.50	0.014	0.020
H	0.10	0.20	0.004	0.008
I	0.30	0.60	0.012	0.024
J	5°	10°	5°	10°

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