TAIWAN SEMICONDUCTOR

RoHS COMPLIANCE

TSM2328

100V N-Channel MOSFET

SOT-23

Pin Definition:
1. Gate
2. Source
3. Drain

PRODUCT SUMMARY

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

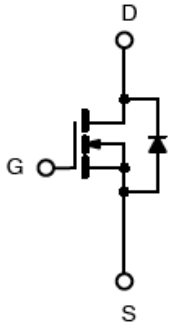
General Description

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

Block Diagram



N-Channel MOSFET

Ordering Information

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

Note: "G" denote for Green Product

Absolute Maximum Rating (Ta = 25°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°C	P_D	1.38	W
Operating Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

* Limited by maximum junction temperature

Thermal Performance

Parameter	Symbol	Limit	Unit
Thermal Resistance - Junction to Foot	$R\Theta_{JF}$	55	°C/W
Thermal Resistance - Junction to Ambient	$R\Theta_{JA}$	100	°C/W

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

Note 2: Pules width limited by maximum junction temperature

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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 = 250uA	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 = 250uA	$V_{GS(TH)}$	1.0	--	2.5	V
Zero Gate Voltage Drain Current	V_{DS} = 80V, V_{GS} = 0V	I_{DSS}	--	--	1	uA
Gate Body Leakage	V_{GS} = ±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 =30Ω, R_G =6Ω	$t_{d(on)}$	--	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 ≤300uS, duty cycle ≤2%

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

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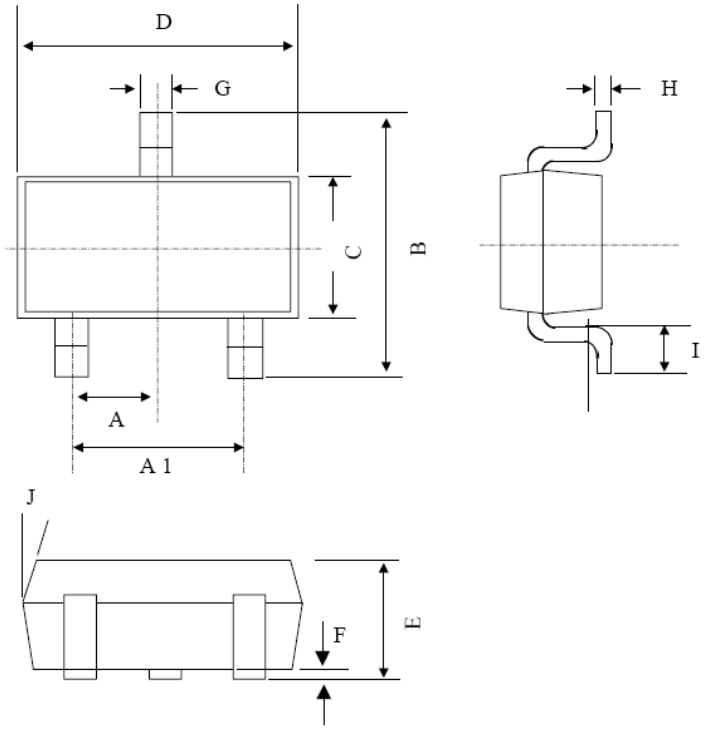
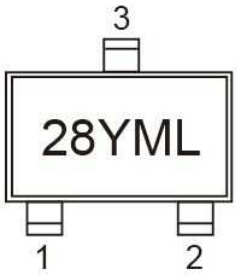
SOT-23 Mechanical Drawing



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	5º	10º	5º	10º

Marking Diagram



Y = Year Code
M = Month Code for Halogen Free Product
(**O**=Jan, **P**=Feb, **Q**=Mar, **R**=Apl, **S**=May, **T**=Jun, **U**=Jul, **V**=Aug, **W**=Sep, **X**=Oct, **Y**=Nov, **Z**=Dec)
L = Lot Code

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