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

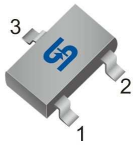
TAIWAN SEMICONDUCTOR

RoHS COMPLIANCE

TSM2328

100V N-Channel MOSFET

SOT-23



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

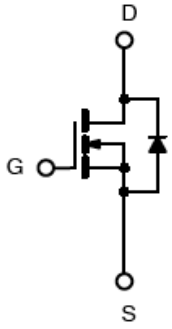
Key Parameter Performance

Parameter	Value	Unit
V_{DS}	100	V
$R_{DS(on)}$ (max)	250	mΩ
Q_g	11.1	nC

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" denotes for Halogen- and Antimony-free as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds

Absolute Maximum Rating (T_A=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 (Note 1)	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	ºC
Storage Temperature Range	T_{STG}	-55 to +150	°C

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

TSM2328
100V N-Channel MOSFET

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

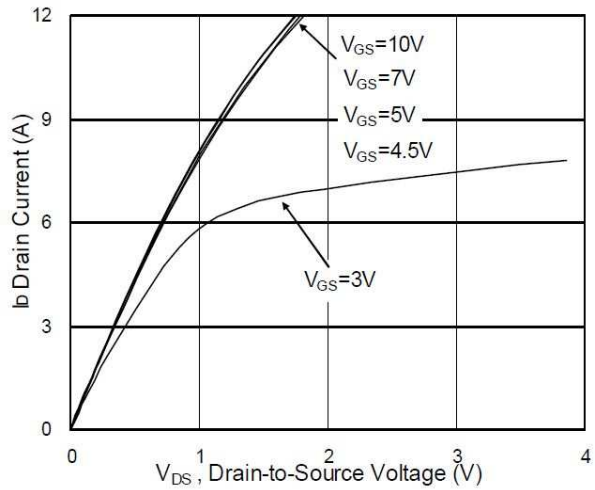
Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	V_{GS} = 0V, I_D = 250μA	BV_{DSS}	100	--	--	V
Drain-Source On-State Resistance	V_{GS} = 10V, I_D = 1.5A	$R_{DS(ON)}$	--	--	250	mΩ
Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = 250μA	$V_{GS(TH)}$	1.0	--	2.5	V
Zero Gate Voltage Drain Current	V_{DS} = 80V, V_{GS} = 0V	I_{DSS}	--	--	1	μA
Gate Body Leakage	V_{GS} = ±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 (Note 2)						
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 (Note 3)						
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:

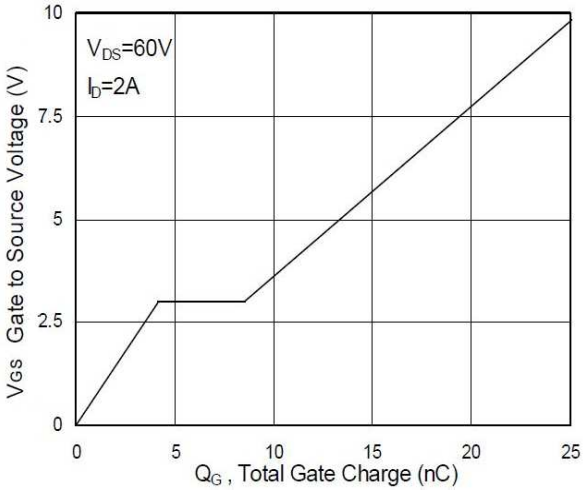
1. Limited by maximum junction temperature.
2. Pulse test: pulse width ≤300μs, duty cycle ≤2%.
3. Guaranteed by design, not subject to production testing

Electrical Characteristics Curve

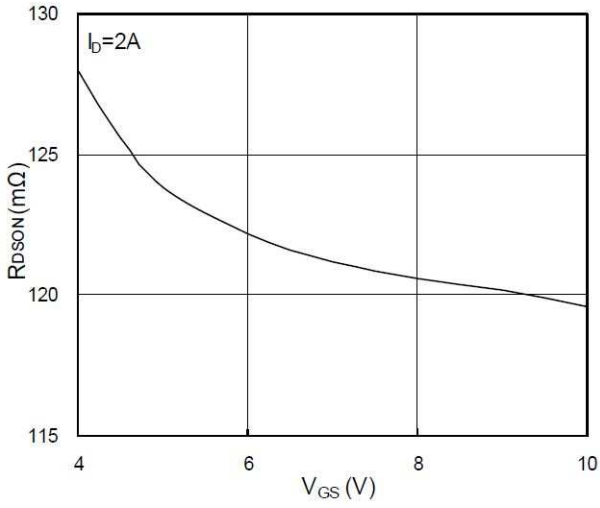
Typical Output Characteristic



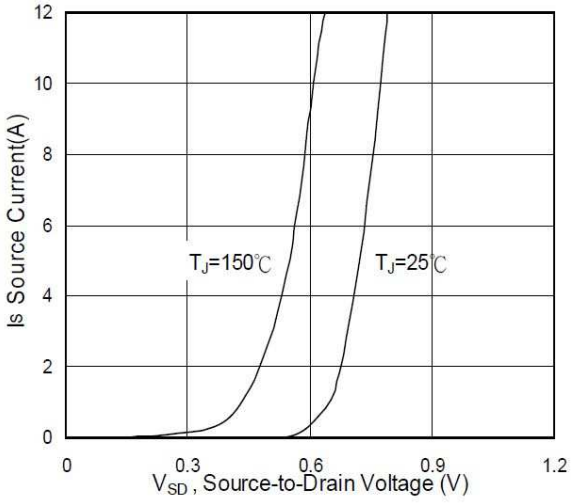
Gate Charge



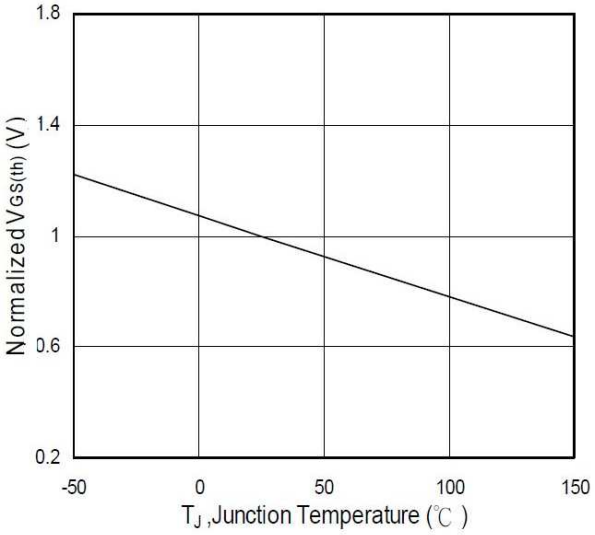
On-Resistance vs. Gate-Source Voltage



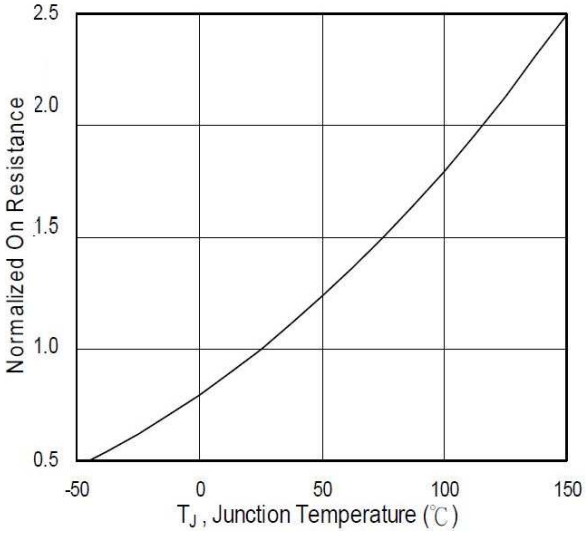
Source-Drain Diode Forward Voltage



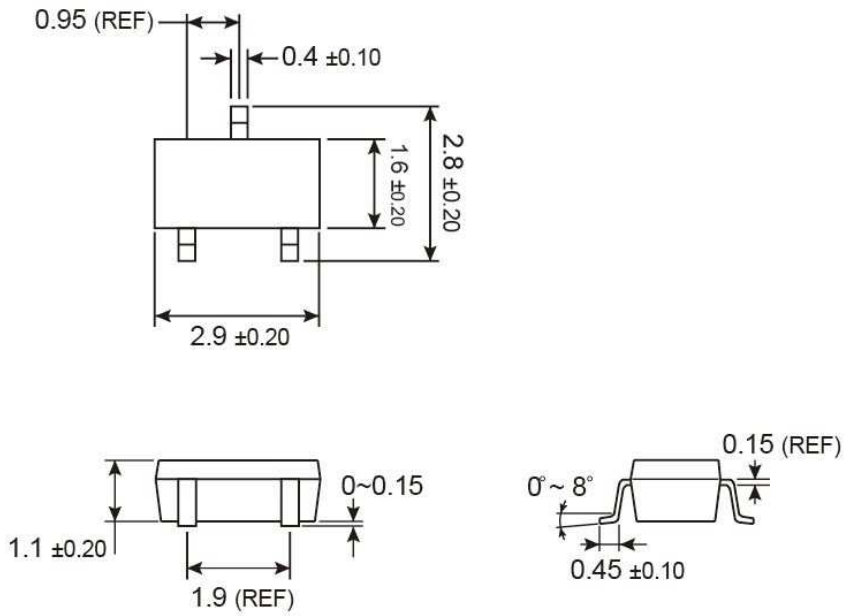
Normalized $V_{GS(TH)}$ vs. Junction Temperature



Normalized $R_{DS(ON)}$ vs. Junction Temperature

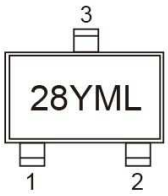


SOT-23 Mechanical Drawing



Unit: Millimeters

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

Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.