

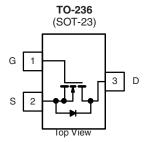
SMG2392N-VB Datasheet N-Channel 200 V (D-S) MOSFET

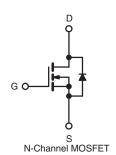
PRODUC	T SUMMARY	
V _{DS} (V)	$R_{DS(on)}(\Omega)$	I _D (A)
200	1.4 at V _{GS} = 10 V	0.6

FEATURES

- Halogen-free According to IEC 61249-2-21 Definition
- 100 % $\rm R_{\rm g}$ and UIS Tested
- Trench Power MOSFET
- Compliant to RoHS Directive 2002/95/EC







ABSOLUTE MAXIMUM RATINGS	6 (T _A = 25 °C, unle	ess otherwise	noted)		_
Parameter		Symbol	5 s	Steady State	Unit
Drain-Source Voltage		V _{DS}	200		V
Gate-Source Voltage		V _{GS}	± 20		
Continuous Drain Current /T 150 °C\8	T _A = 25 °C		0.6	0.45	Δ.
Continuous Drain Current (T _J = 150 °C) ^a	T _A = 70 °C	I _D	0.5	0.35	
Pulsed Drain Current ^b		I _{DM}	2.5		А
valanche Current ^b		I _{AS}	2.5		
Single Avalanche Energy	L = 0.1 IIII	E _{AS}	50		mJ
Continuous Source Current (Diode Conduction) ^a		I _S	0.6		Α
Power Dissipation ^a	T _A = 25 °C	В	1.55	1.03	W
rower dissipation	T _A = 70 °C	P_{D}	1.20	0.87	VV
Operating Junction and Storage Temperature Range		T _J , T _{stq}	- 55 to 150		°C

THERMAL RESISTANCE RATINGS						
Parameter		Symbol	Typical	Maximum	Unit	
Maximum Junction-to-Ambient ^a	t ≤ 5 s	R _{thJA}	80	100		
Maximum Junction-to-Ambient	Steady State		130	170	°C/W	
Maximum Junction-to-Foot	Steady State	R _{thJF}	45	55]	

Notes:

- a. Surface mounted on 1" x 1" FR4 board.
- b. Pulse width limited by maximum junction temperature.

服务热线:400-655-8788

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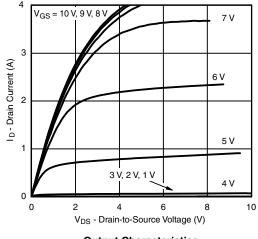
				Limits		
Parameter	Symbol	Test Conditions	Min.	Тур.	Max.	Unit
Static				•		
Drain-Source Breakdown Voltage	V_{DS}	V _{GS} = 0 V, I _D = 1 mA	200			V
Gate-Threshold Voltage	V _{GS(th)}	$V_{DS} = V_{GS}, I_{D} = 250 \mu A$	1.5		4.5	V
Gate-Body Leakage	I _{GSS}	$V_{DS} = 0 \text{ V}, V_{GS} = \pm 20 \text{ V}$			± 100	nA
Zoro Cata Valtaga Drain Current		$V_{DS} = 100 \text{ V}, V_{GS} = 0 \text{ V}$			1	
Zero Gate Voltage Drain Current	I _{DSS}	V_{DS} = 100 V, V_{GS} = 0 V, T_J = 70 °C			75	μΑ
On-State Drain Current ^a	I _{D(on)}	$V_{DS} \ge 15 \text{ V}, V_{GS} = 10 \text{ V}$	2.5			Α
Drain-Source On-Resistance ^a	R _{DS(on)}	V _{GS} = 10 V, I _D = 0.5 A		1.4		Ω
Forward Transconductance ^a	9 _{fs}	V _{DS} = 15 V, I _D = 0.5 A		4		S
Diode Forward Voltage	V_{SD}	I _S = 1 A, V _{GS} = 0 V		0.8	1.2	V
Dynamic ^b						
Total Gate Charge	Qg			3	5	
Gate-Source Charge	Q_{gs}	$V_{DS} = 100 \text{ V}, V_{GS} = 10 \text{ V}, I_D = 0.5 \text{ A}$		0.37		nC
Gate-Drain Charge	Q _{gd}			1.45		
Gate Resistance	R_{g}		0.5	1.3	2.4	Ω
Switching	-					
Turn-On Delay Time	t _{d(on)}			7	11	
Rise Time	t _r	$V_{DD} = 100 \text{ V}, R_1 = 33 \Omega$		10	15	1
Turn-Off Delay Time	t _{d(off)}	$I_D \cong 0.2 \text{ A}, V_{GEN} = 10 \text{ V}, R_g = 6 \Omega$		9	15	ns
Fall Time	t _f			11	15	
Source-Drain Reverse Recovery Time	t _{rr}	$I_F = 0.5 \text{ A}, dI/dt = 100 \text{ A}/\mu \text{s} 50100$				

Notes:

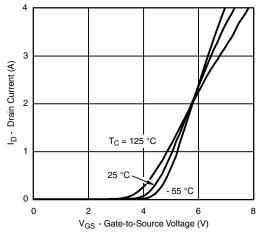
- a. Pulse test: PW \leq 300 $\mu s,$ duty cycle \leq 2 %.
- b. Guaranteed by design, not subject to production testing.

Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

TYPICAL CHARACTERISTICS (25 °C, unless otherwise noted)



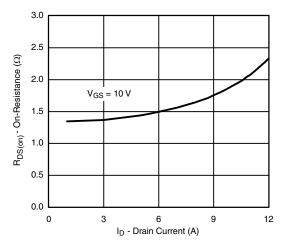




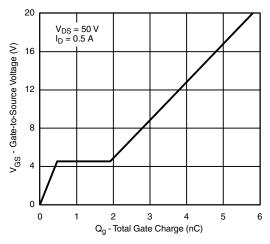
Transfer Characteristics



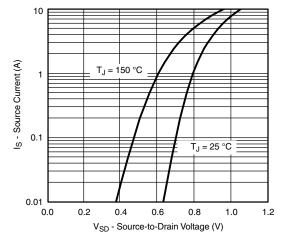
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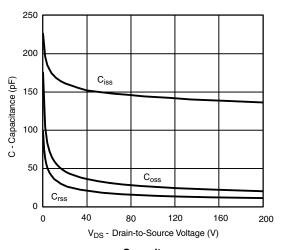
On-Resistance vs. Drain Current



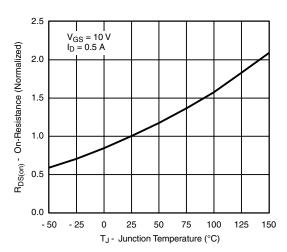
Gate Charge



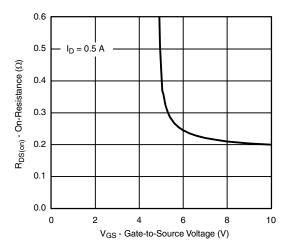
Source-Drain Diode Forward Voltage



Capacitance



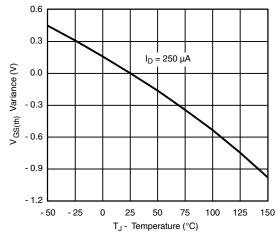
On-Resistance vs. Junction Temperature

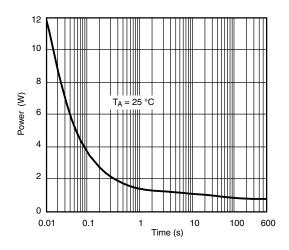


On-Resistance vs. Gate-to-Source Voltage



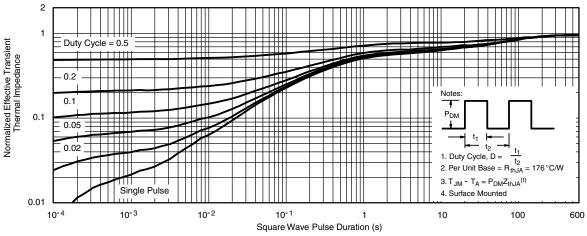
TYPICAL CHARACTERISTICS (25 °C, unless otherwise noted)





Threshold Voltage

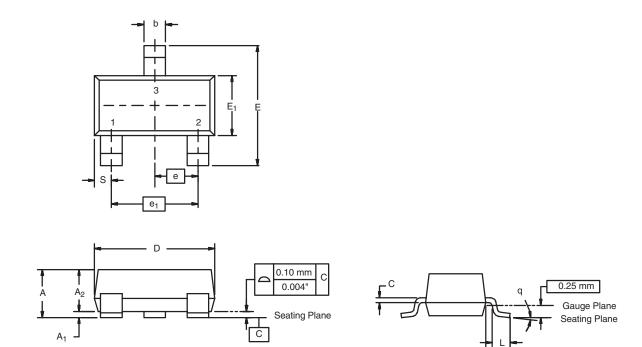
Single Pulse Power



Normalized Thermal Transient Impedance, Junction-to-Ambient



SOT-23 (TO-236): 3-LEAD



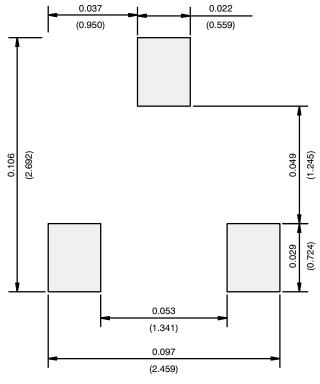
D:	MILLIMETERS		INCHES		
Dim	Min	Max	Min	Max	
Α	0.89	1.12	0.035	0.044	
A ₁	0.01	0.10	0.0004	0.004	
A ₂	0.88	1.02	0.0346	0.040	
b	0.35	0.50	0.014	0.020	
С	0.085	0.18	0.003	0.007	
D	2.80	3.04	0.110	0.120	
Е	2.10	2.64	0.083	0.104	
E ₁	1.20	1.40	0.047	0.055	
е	0.95	BSC	0.0374 Ref		
e ₁	1.90 BSC		0.0748 Ref		
L	0.40	0.60	0.016	0.024	
L ₁	0.64	0.64 Ref		0.025 Ref	
S	0.50 Ref		0.020 Ref		
q	3°	8°	3°	8°	

DWG: 5479



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RECOMMENDED MINIMUM PADS FOR SOT-23



Recommended Minimum Pads Dimensions in Inches/(mm)



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