

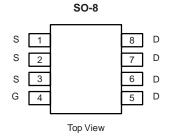
P-Channel 30-V (D-S) MOSFET

PRODUCT SUMMARY					
V _{DS} (V)	R _{DS(on)} (Ω)	I _D (A)			
	0.042 at V _{GS} = - 10 V	- 5.8			
- 30	0.055 at V _{GS} = - 6 V	- 5.0			
	0.060 at V _{GS} = - 4.5 V	- 4.4			

FEATURES

- Halogen-free According to IEC 61249-2-21
 Definition
- TrenchFET[®] Power MOSFET
- Compliant to RoHS Directive 2002/95/EC





P-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS $T_A = 25 \text{ °C}$, unless otherwise noted						
Parameter		Symbol	10 s	Steady State	Unit	
Drain-Source Voltage		V _{DS}	- 30		V	
Gate-Source Voltage		V _{GS}	± 20			
	T _A = 25 °C	– I _D	- 5.8	- 4.1		
Continuous Drain Current (T _J = 150 °C) ^a	T _A = 70 °C		- 4.6	- 3.2		
Pulsed Drain Current		I _{DM}	- 30		A	
Continuous Source Current (Diode Conduction) ^a		۱ _S	- 2.3	- 1.1		
	T _A = 25 °C	P.	2.5	1.3	W	
Maximum Power Dissipation ^a	T _A = 70 °C	P _D	1.6	0.8		
Operating Junction and Storage Temperature Range		T _J , T _{stg}	- 55 to 150		°C	

THERMAL RESISTANCE RATINGS					
Parameter		Symbol	Typical	Maximum	Unit
	t ≤ 10 s	R _{thJA}	40	50	
Maximum Junction-to-Ambient ^a	Steady State		70	95	°C/W
Maximum Junction-to-Foot (Drain)	Steady State	R _{thJF}	24	30	

Notes:

a. Surface Mounted on 1" x 1" FR4 board.

Parameter	Symbol	Test Conditions	Min.	Typ. ^a	Max.	Unit	
Static							
Gate Threshold Voltage	V _{GS(th)}	$V_{DS} = V_{GS}, I_{D} = -250 \ \mu A$			- 2.0	V	
Gate-Body Leakage	I _{GSS}	$V_{DS} = 0 V, V_{GS} = \pm 20 V$			± 100	nA	
Zana Osta Malla na Dusia Osuna d	I _{DSS}	$V_{DS} = -30 \text{ V}, \text{ V}_{GS} = 0 \text{ V}$			- 1	μA	
Zero Gate Voltage Drain Current		$V_{DS} = -30 \text{ V}, V_{GS} = 0 \text{ V}, T_{J} = 70 \text{ °C}$			- 5		
a a cara b		$V_{DS} \le -10 \text{ V}, \text{ V}_{GS} = -10 \text{ V}$ - 20				•	
On-State Drain Current ^b	I _{D(on)}	$V_{DS} \leq$ - 5 V, V_{GS} = - 4.5 V	- 5			A	
		V _{GS} = - 10 V, I _D = - 5.8 A		0.033	0.042	0.055 Ω	
Drain-Source On-State Resistance ^b	R _{DS(on)}	V _{GS} = - 6 V, I _D = - 5 A		0.043	0.055		
		V _{GS} = - 4.5 V, I _D = - 4.4 A		0.056	0.060		
Forward Transconductance ^b	g _{fs}	V _{DS} = - 15 V, I _D = - 5.8 A		13		S	
Diode Forward Voltage ^b	V _{SD}	I _S = - 2.3 A, V _{GS} = 0 V		- 0.8	- 1.1	V	
Dynamic ^a							
Total Gate Charge	Qg			16	24		
Gate-Source Charge	Q _{gs}	V_{DS} = - 15 V, V_{GS} = - 10 V, I_{D} = - 3.5 A		2.3		nC	
Gate-Drain Charge	Q _{gd}			4.5			
Gate Resistance	R _g			8.8		Ω	
Turn-On Delay Time	t _{d(on)}			14	25		
Rise Time	t _r	V_{DD} = - 15 V, R_L = 15 Ω		14	25		
Turn-Off Delay Time	t _{d(off)}	$t_{d(off)}$ I _D \cong - 1 A, V _{GEN} = - 10 V, R _g = 6 Ω		42	70	ns	
Fall Time	t _f			30	50		
Source-Drain Reverse Recovery Time	t _{rr}	I _F = - 1.2 A, dl/dt = 100 A/µs		30	60		

Notes:

a. Guaranteed by design, not subject to production testing.

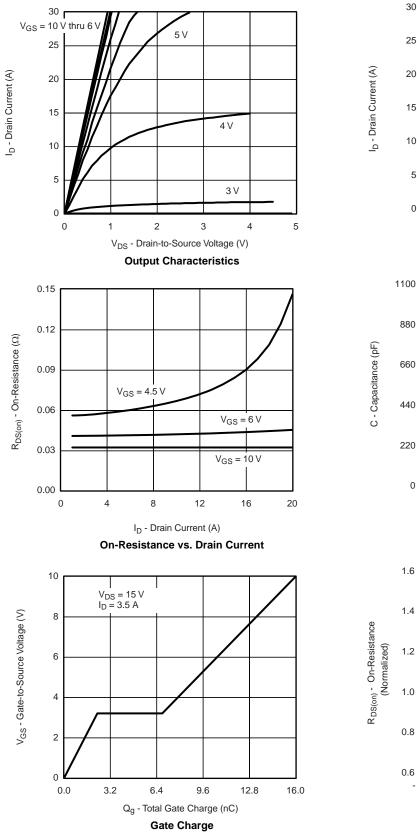
b. Pulse test; pulse width \leq 300 $\mu s,$ duty cycle \leq 2 %.

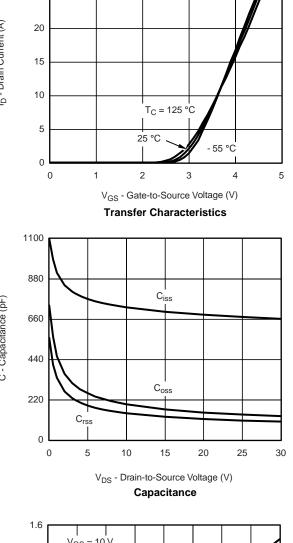
Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure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

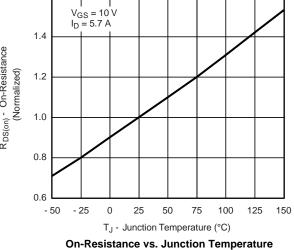




TYPICAL CHARACTERISTICS 25 °C, unless otherwise noted

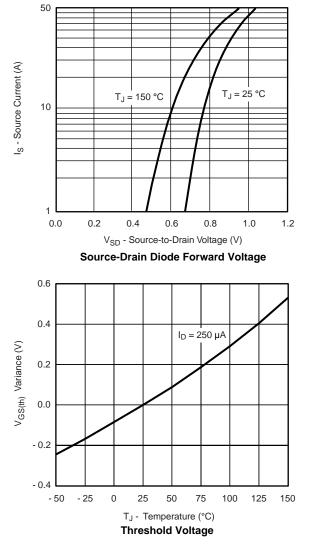


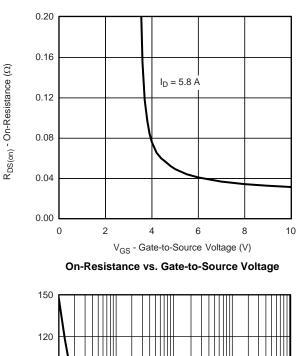






TYPICAL CHARACTERISTICS 25 C, unless otherwise noted

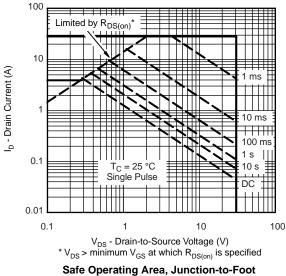




Time (s) Single Pulse Power, Junction-to-Ambient

10-1

1



90

60

30

0

10⁻³

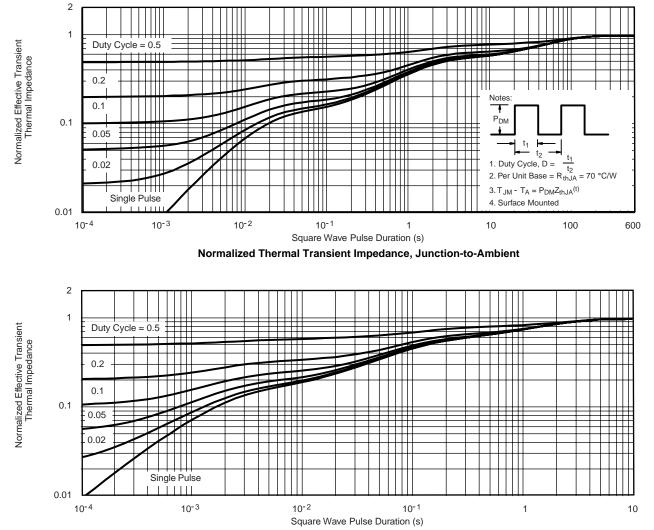
10-2

Power (W)

10

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TYPICAL CHARACTERISTICS 25 °C, unless otherwise noted

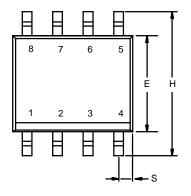


Normalized Thermal Transient Impedance, Junction-to-Foot



SOIC (NARROW): 8-LEAD

JEDEC Part Number: MS-012

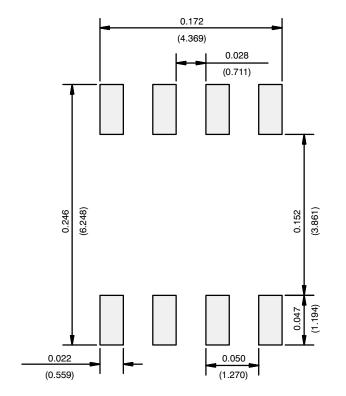




	MILLIM	IETERS	INCHES			
DIM	Min	Мах	Min	Max		
A	1.35	1.75	0.053	0.069		
A ₁	0.10	0.20	0.004	0.008		
В	0.35	0.51	0.014	0.020		
С	0.19	0.25	0.0075	0.010		
D	4.80	5.00	0.189	0.196		
E	3.80	4.00	0.150	0.157		
е	1.27	BSC	0.050 BSC			
н	5.80	6.20	0.228	0.244		
h	0.25	0.50	0.010	0.020		
L	0.50	0.93	0.020	0.037		
q	0°	8°	0°	8°		
S	0.44	0.64	0.018	0.026		
ECN: C-06527-Rev. I, 11-Sep-06 DWG: 5498						



RECOMMENDED MINIMUM PADS FOR SO-8



Recommended Minimum Pads Dimensions in Inches/(mm)



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