

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

PRODUCT SUMMARY					
V <sub>DS</sub> (V)	<b>R<sub>DS(on)</sub> (</b> Ω <b>)</b>	I <sub>D</sub> (A)			
- 30	0.036 at V <sub>GS</sub> = - 10 V	- 5.2			
	0.055 at V <sub>GS</sub> = - 4.5 V	- 4.2			

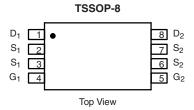
#### FEATURES

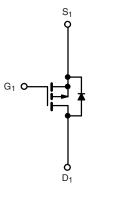
- Halogen-free
- TrenchFET<sup>®</sup> Power MOSFETs

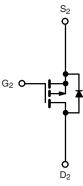
#### APPLICATIONS

- Load Switch
- Battery Switch









P-Channel MOSFET

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ABSOLUTE MAXIMUM RATINGS T <sub>A</sub> = 25 °C, unless otherwise noted							
Parameter		Symbol	10 s	Steady State	Unit		
Drain-Source Voltage		V <sub>DS</sub>	- 30		V		
Gate-Source Voltage		V <sub>GS</sub>	± 20				
Continuous Drain Current /T 150 °C\a	T <sub>A</sub> = 25 °C	- I <sub>D</sub>	- 5.2	- 4.1			
Continuous Drain Current (T <sub>J</sub> = 150 °C) <sup>a</sup>	T <sub>A</sub> = 70 °C		- 4.2	- 3.6			
Pulsed Drain Current (10 µs Pulse Width)		I <sub>DM</sub>	- 30		A		
Continuous Source Current (Diode Conduction) <sup>a</sup>		ا <sub>S</sub>	- 1.0	- 0.70			
	T <sub>A</sub> = 25 °C	P <sub>D</sub>	1.14	0.83	w		
Maximum Power Dissipation <sup>a</sup>	T <sub>A</sub> = 70 °C		0.73	0.53			
Operating Junction and Storage Temperature Range		T <sub>J</sub> , T <sub>stg</sub>	- 55 to 150		°C		

THERMAL RESISTANCE RATINGS						
Parameter		Symbol	Typical	Maximum	Unit	
Manimum langting to Angling 12	t ≤ 10 s	- R <sub>thJA</sub>	86	110		
Maximum Junction-to-Ambient <sup>a</sup>	Steady State		124	150	°C/W	
Maximum Junction-to-Foot	Steady State	R <sub>thJF</sub>	52	65		

Notes:

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

<b>SPECIFICATIONS</b> $T_J = 25 \text{ °C}$ , unless otherwise noted									
Parameter	Symbol	Test Conditions Min.		Тур.	Max.	Unit			
Static									
Gate Threshold Voltage	V <sub>GS(th)</sub>	$V_{DS} = V_{GS}, I_{D} = -250 \ \mu A$	- 1.0		- 3.0	V			
Gate-Body Leakage	I <sub>GSS</sub>	$V_{DS} = 0 V, V_{GS} = \pm 20 V$			± 100	nA			
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	$V_{DS} = -30 \text{ V}, V_{GS} = 0 \text{ V}$			- 1				
		$V_{DS}$ = - 30 V, $V_{GS}$ = 0 V, $T_{J}$ = 55 °C			- 10	μΑ			
On-State Drain Current <sup>a</sup>	I <sub>D(on)</sub>	$V_{DS} \ge$ - 5 V, $V_{GS}$ = - 10 V	- 15			А			
Drain-Source On-State Resistance <sup>a</sup>	R <sub>DS(on)</sub>	$V_{GS} = -10 \text{ V}, \text{ I}_{D} = -4.7 \text{ A}$		0.036		0			
		V <sub>GS</sub> = - 4.5 V, I <sub>D</sub> = - 3.8 A		0.055		Ω			
Forward Transconductance <sup>a</sup>	9 <sub>fs</sub>	V <sub>DS</sub> = - 15 V, I <sub>D</sub> = - 4.7 A		14		S			
Diode Forward Voltage <sup>a</sup>	V <sub>SD</sub>	I <sub>S</sub> = - 1.0 A, V <sub>GS</sub> = 0 V		- 0.74	- 1.1	V			
Dynamic <sup>b</sup>									
Total Gate Charge	Qg			13	20				
Gate-Source Charge	Q <sub>gs</sub>	$V_{DS}$ = - 15 V, $V_{GS}$ = - 4.5 V, $I_{D}$ = - 4.7 A		3		nC			
Gate-Drain Charge	Q <sub>gd</sub>			5.8		1			
Gate Resistance	Rg	f = 1.0 MHz		4.6		Ω			
Turn-On Delay Time	t <sub>d(on)</sub>			13	20				
Rise Time	t <sub>r</sub>	$V_{DD}$ = - 15 V, $R_L$ = 15 $\Omega$		14	22				
Turn-Off Delay Time	t <sub>d(off)</sub>	${\rm I}_{\rm D}\cong$ - 1 A, ${\rm V}_{\rm GEN}$ = - 10 V, ${\rm R}_{\rm G}$ = 6 $\Omega$		52	80	ns			
Fall Time	t <sub>f</sub>			26	40				
Source-Drain Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = - 1.0 A, dl/dt = 100 A/μs		40	60				

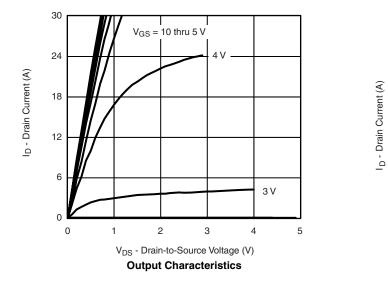
Notes:

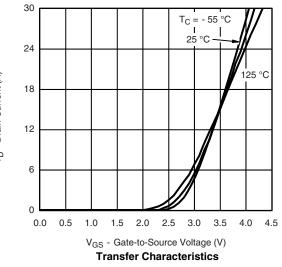
a. Pulse test; pulse width  $\leq$  300 µs, duty cycle  $\leq$  2 %.

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.

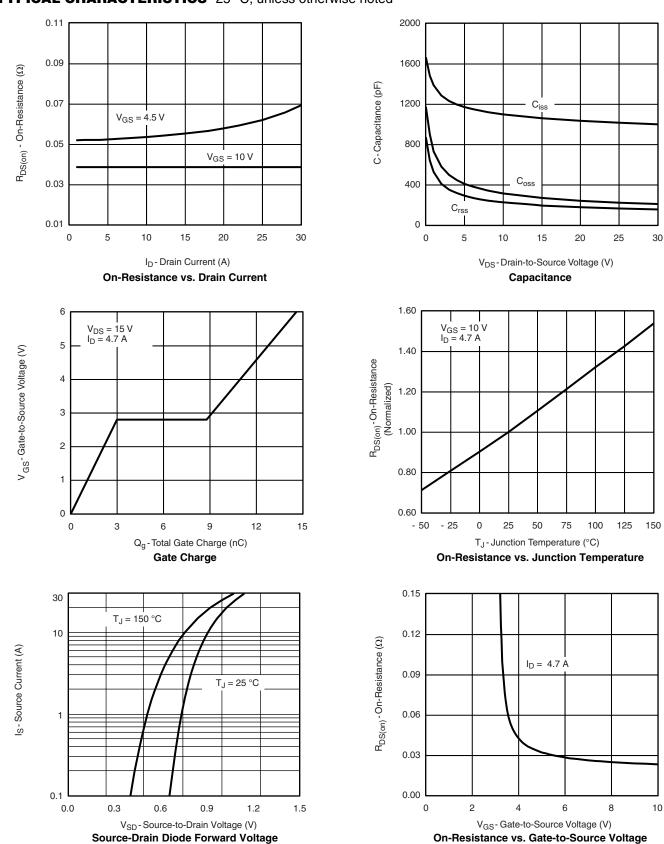
#### TYPICAL CHARACTERISTICS 25 °C, unless otherwise noted





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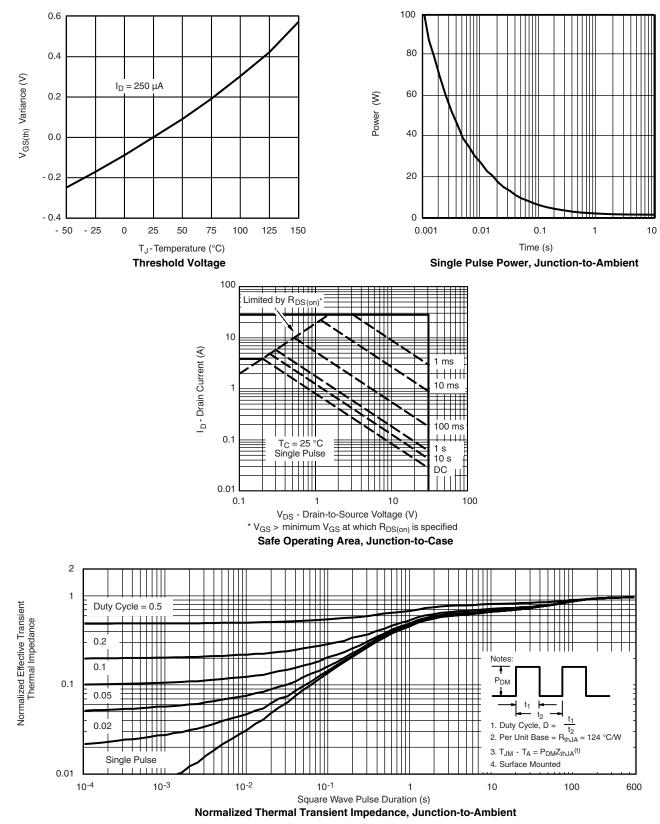




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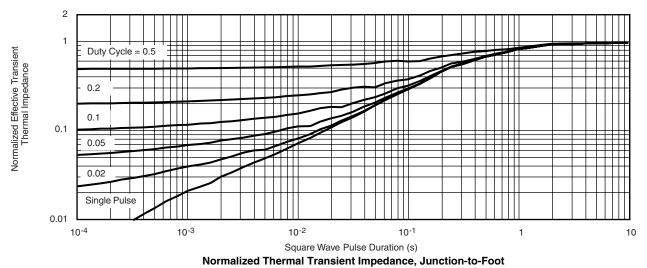








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