

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

PRODUCT SUMMARY				
V _{DS} (V)	$R_{DS(on)}(\Omega)$	I _D (A)		
- 30	0.036 at V _{GS} = - 10 V	- 5.2		
	0.055 at V _{GS} = - 4.5 V	- 4.2		

FEATURES

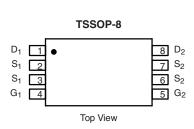
- Halogen-free
- TrenchFET® Power MOSFETs

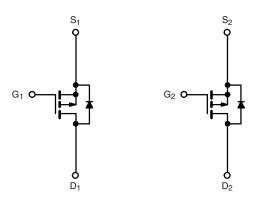


RoHS COMPLIANT

APPLICATIONS

- · Load Switch
- · Battery Switch





P-Channel MOSFET

P-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS T _A = 25 °C, unless otherwise noted						
Parameter		Symbol	10 s	Steady State	Unit	
Drain-Source Voltage		V _{DS}	- 30		٧	
Gate-Source Voltage		V _{GS}	± 20			
Continuous Drain Current /T 150 °C\8	T _A = 25 °C	- I _D	- 5.2	- 4.1	Λ	
Continuous Drain Current (T _J = 150 °C) ^a	T _A = 70 °C		- 4.2	- 3.6		
Pulsed Drain Current (10 μs Pulse Width)		I _{DM}	- 30		Α	
Continuous Source Current (Diode Conduction) ^a		I _S	- 1.0	- 0.70		
Mariana Paran Dissipation	T _A = 25 °C	P _D	1.14	0.83	W	
Maximum Power Dissipation ^a	T _A = 70 °C		0.73	0.53		
Operating Junction and Storage Temperature Range		T _J , T _{stg}	- 55 to 150		°C	

THERMAL RESISTANCE RATINGS					
Parameter		Symbol	Typical	Maximum	Unit
Manipular to Australia	t ≤ 10 s	R _{thJA}	86	110	
Maximum Junction-to-Ambient ^a	Steady State		124	150	°C/W
Maximum Junction-to-Foot	Steady State	R _{thJF}	52	65	

Notes:

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

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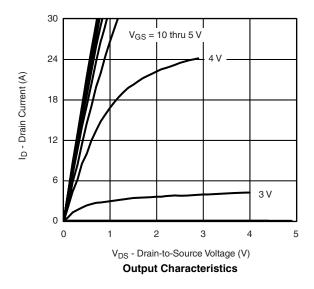
Parameter	Symbol	Test Conditions	Min.	Тур.	Max.	Unit	
Static			•	<u>'I</u>	<u> </u>		
Gate Threshold Voltage	V _{GS(th)}	$V_{DS} = V_{GS}, I_{D} = -250 \mu A$			- 3.0	V	
Gate-Body Leakage	I _{GSS}	$V_{DS} = 0 \text{ V}, V_{GS} = \pm 20 \text{ V}$	= 0 V, V _{GS} = ± 20 V		± 100	nA	
Zero Gate Voltage Drain Current		V _{DS} = - 30 V, V _{GS} = 0 V			- 1	μΑ	
	I _{DSS}	$V_{DS} = -30 \text{ V}, V_{GS} = 0 \text{ V}, T_{J} = 55 \text{ °C}$		- 10			
On-State Drain Current ^a	I _{D(on)}	$V_{DS} \ge -5 \text{ V}, V_{GS} = -10 \text{ V}$	- 15			Α	
Drain-Source On-State Resistance ^a	В	$V_{GS} = -10 \text{ V}, I_D = -4.7 \text{ A}$		0.036		0	
	R _{DS(on)}	$V_{GS} = -4.5 \text{ V}, I_D = -3.8 \text{ A}$	V _{GS} = - 4.5 V, I _D = - 3.8 A			Ω	
Forward Transconductance ^a	9 _{fs}	V _{DS} = - 15 V, I _D = - 4.7 A		14		S	
Diode Forward Voltage ^a	V_{SD}	I _S = - 1.0 A, V _{GS} = 0 V		- 0.74	- 1.1	V	
Dynamic ^b			•				
Total Gate Charge	Q_{g}			13	20		
Gate-Source Charge	Q_{gs}	$V_{DS} = -15 \text{ V}, V_{GS} = -4.5 \text{ V}, I_{D} = -4.7 \text{ A}$		3		nC	
Gate-Drain Charge	Q_{gd}			5.8		1	
Gate Resistance	R_{g}	f = 1.0 MHz		4.6		Ω	
Turn-On Delay Time	t _{d(on)}			13	20		
Rise Time	t _r	V_{DD} = - 15 V, R_L = 15 Ω		14	22		
Turn-Off Delay Time	t _{d(off)}	$I_D\cong$ - 1 A, $V_{GEN}=$ - 10 V, $R_G=6~\Omega$		52	80	ns	
Fall Time	t _f			26	40		
Source-Drain Reverse Recovery Time	t _{rr}	I _F = - 1.0 A, dl/dt = 100 A/μs		40	60		

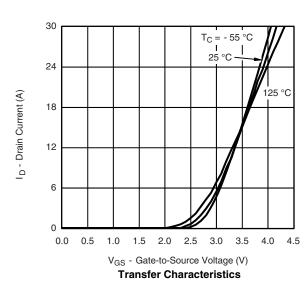
Notes:

- a. Pulse test; pulse width \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

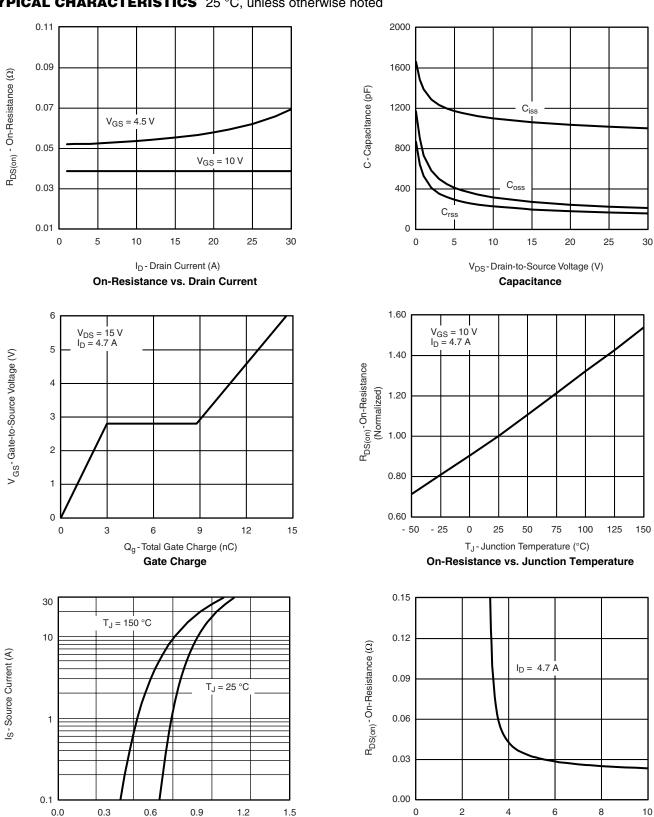




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 V_{SD} -Source-to-Drain Voltage (V)

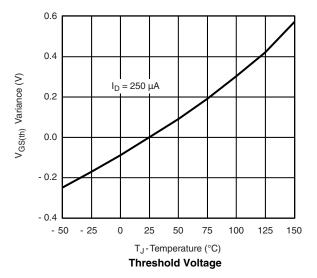
Source-Drain Diode Forward Voltage

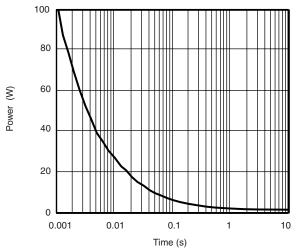
V_{GS}- Gate-to-Source Voltage (V)

On-Resistance vs. Gate-to-Source Voltage

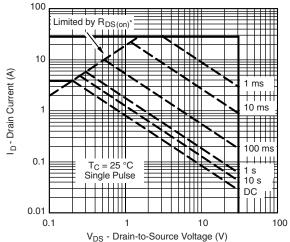


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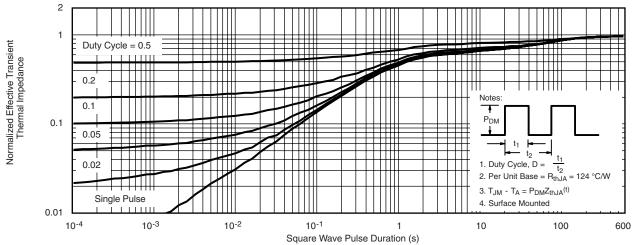




Single Pulse Power, Junction-to-Ambient



 * V_{GS} > minimum V_{GS} at which R_{DS(on)} is specified **Safe Operating Area, Junction-to-Case**

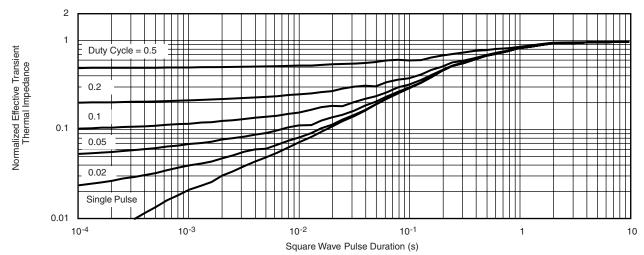


Normalized Thermal Transient Impedance, Junction-to-Ambient

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TYPICAL CHARACTERISTICS 25 °C, unless otherwise noted



Normalized Thermal Transient Impedance, Junction-to-Foot



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