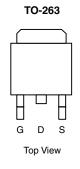


N-Channel 200 V (D-S) 175 °C MOSFET

PRODUCT SUMMARY			
V _{DS} (V)	$R_{DS(on)}\left(\Omega\right)$	I _D (A)	
200	0.048 at V _{GS} = 10 V	40	
200	0.060 at V _{GS} = 6.5 V	35	

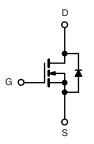


FEATURES

- TrenchFET® Power MOSFET
- 175 °C Junction Temperature
- Low Thermal Resistance Package
- PWM Optimized for Fast Switching
- Compliant to RoHS Directive 2002/95/EC

APPLICATIONS

- Isolated DC/DC Converters
 - Primary-Side Switch



N-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS (T _C = 25 °C, unless otherwise noted)					
Parameter	Symbol	Limit	Unit		
Drain-Source Voltage		V _{DS}	200	V	
Gate-Source Voltage		V _{GS}	± 20	7 v	
Continuous Drain Current (T, = 175 °C)	T _C = 25 °C	I-	40		
Continuous Diam Current (1) = 173 C)	T _C = 125 °C	I _D	25	Α	
Pulsed Drain Current		I _{DM}	80	A	
Avalanche Current		I _{AR}	20		
Repetitive Avalanche Energy ^a L = 0.1 mH		E _{AR}	16.2	mJ	
	T _C = 25 °C		200 ^b	147	
Maximum Power Dissipation ^a	T _A = 25 °C ^c	P _D	4.5	W	
Operating Junction and Storage Temperature Range		T _J , T _{stg}	- 55 to 175	°C	

THERMAL RESISTANCE RATINGS					
Parameter		Symbol	Limit	Unit	
Junction-to-Ambient	PCB Mount (TO-263) ^c	R _{thJA}	40	°C/W	
Junction-to-Case (Drain)		R_{thJC}	1		

Notes:

- a. Duty cycle \leq 1 %.
- b. See SOA curve for voltage derating.
- c. When mounted on 1" square PCB (FR-4 material).



Parameter	Symbol	Test Conditions	Min .	Тур.	Max.	Unit
Static						
Drain-Source Breakdown Voltage	V _{DS}	$V_{GS} = 0 \text{ V}, I_D = 250 \mu\text{A}$	200			V
Gate-Threshold Voltage	V _{GS(th)}	$V_{DS} = V_{GS}, I_{D} = 250 \mu A$	2		4	
Gate-Body Leakage	I _{GSS}	$V_{DS} = 0 \text{ V}, V_{GS} = \pm 20 \text{ V}$			± 100	nA
Zero Gate Voltage Drain Current		V _{DS} = 160 V, V _{GS} = 0 V			1	μΑ
	I _{DSS}	V _{DS} = 160 V, V _{GS} = 0 V, T _J = 125 °C			50	
		V _{DS} = 160 V, V _{GS} = 0 V, T _J = 175 °C			250	
On-State Drain Current ^a	I _{D(on)}	$V_{DS} \ge 15 \text{ V}, V_{GS} = 10 \text{ V}$	60			Α
Drain-Source On-State Resistance ^a		V _{GS} = 10 V, I _D = 20 A		0.048		Ω
		$V_{GS} = 10 \text{ V}, I_D = 20 \text{ A}, T_J = 125 ^{\circ}\text{C}$		0.150		
	R _{DS(on)}	V _{GS} = 10 V, I _D = 20 A, T _J = 175 °C		0.180		
Drain-Source on State Resistance		V _{GS} = 6.5 V, I _D = 15 A		0.060		
Forward Transconductance ^a	9 _{fs}	V _{DS} = 15 V, I _D = 30 A	15			S
Dynamic ^b	'			1	!	
Input Capacitance	C _{iss}	V _{GS} = 0 V, V _{DS} = 25 V, f = 1 MHz		2820		pF
Output Capacitance	C _{oss}			300		
Reverse Transfer Capacitance	C _{rss}			120		
Total Gate Charge ^c	Qg			35		nC
Gate-Source Charge ^c	Q_{gs}	$V_{DS} = 100 \text{ V}, V_{GS} = 10 \text{ V}, I_D = 20 \text{ A}$		11		
Gate-Drain Charge ^c	Q_{gd}			14		
Gate Resistance	R _G			2		Ω
Turn-On Delay Time ^c	t _{d(on)}			15	25	
Rise Time ^c	t _r	V_{DD} = 100 V, R_L = 5 Ω I_D \cong 20 A, V_{GEN} = 10 V, R_G = 2.5 Ω		35	55	ns
Turn-Off Delay Time ^c	t _{d(off)}			40	60	
Fall Time ^c	t _f			30	45	
Source-Drain Diode Ratings and Cha	aracteristics (T _C = 25 °C) ^b				
Continuous Current	Is				40	^
Pulsed Current	I _{SM}				60	- A
Forward Voltage ^a	V _{SD}	I _F = 20 A, V _{GS} = 0 V		1	1.5	V
Reverse Recovery Time	t _{rr}			115	170	ns
Peak Reverse Recovery Charge	I _{RM(REC)}	I _F = 50 A, dl/dt = 100 A/μs		7.5	12	Α
Reverse Recovery Charge	Q _{rr}			0.43	1.02	μC

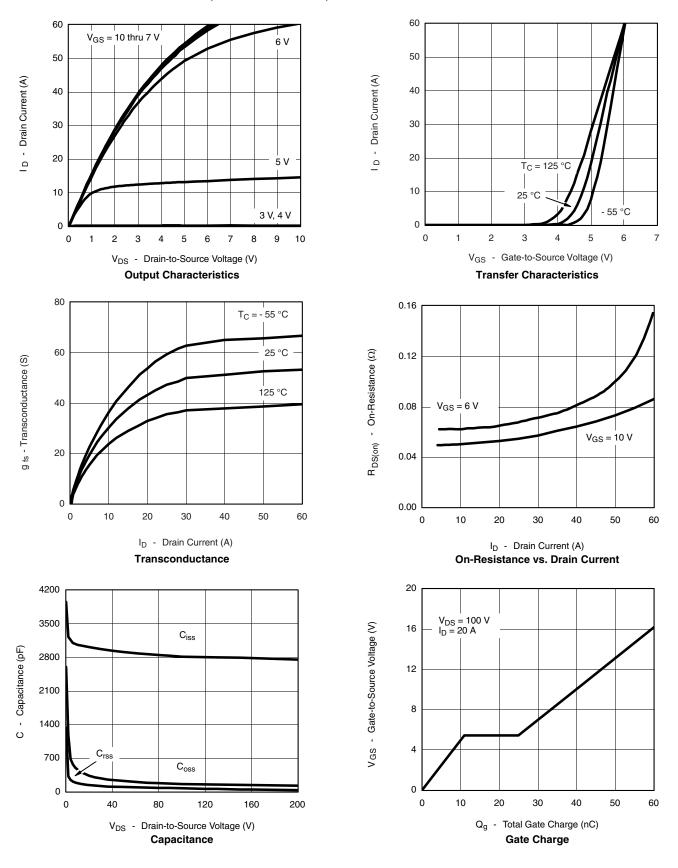
Notes

- a. Pulse test; pulse width $\leq 300~\mu s,$ duty cycle $\leq 2~\%.$
- b. Guaranteed by design, not subject to production testing.
- c. Independent of operating temperature.

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.

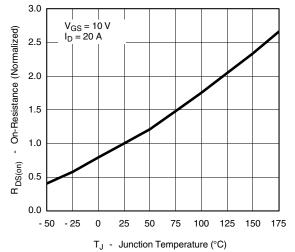


TYPICAL CHARACTERISTICS (25 °C unless noted)

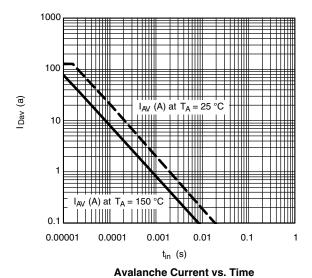




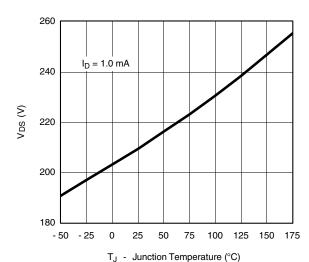
TYPICAL CHARACTERISTICS (25 °C unless noted)



On-Resistance vs. Junction Temperature



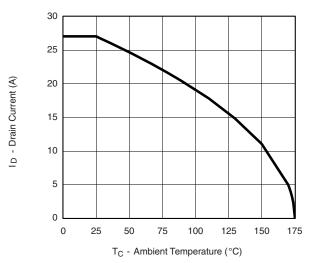
Source-Drain Diode Forward Voltage



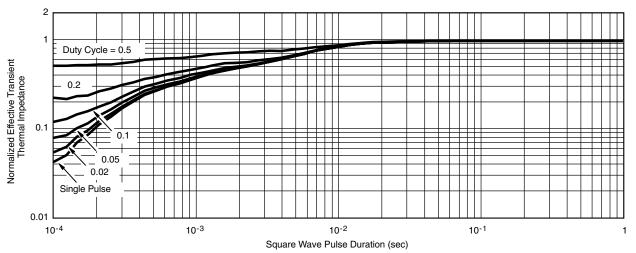
Drain Source Breakdown vs. Junction Temperature



THERMAL RATINGS



Maximum Avalanche and Drain Current vs. Case Temperature



Normalized Thermal Transient Impedance, Junction-to-Case



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