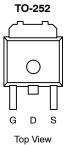


N-Channel 20-V (D-S)175 °C MOSFET

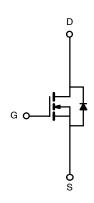
PRODUCT SUMMARY				
V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A) ^a		
	0.0045 @ V _{GS} = 4.5 V	100		
20	0.006 @ V _{GS} = 2.5 V	90		

FEATURES

- TrenchFET® Power MOSFET
- 175°C Maximum Junction Temperature
- 100% Rg Tested



Drain Connected to Tab



N-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS (T _A = 25°C UNLESS OTHERWISE NOTED)					
Parameter		Symbol	Limit	Unit	
Drain-Source Voltage		V _{DS}	20	V	
Gate-Source Voltage		V _{GS}	±15	v	
	$T_{C} = 25^{\circ}C$		100		
Continuous Drain Current ^a	$T_{C} = 100^{\circ}C$	ID	80		
Pulsed Drain Current		I _{DM}	200	A	
Continuous Source Current (Diode Conduction) ^a		IS	65		
	$T_{C} = 25^{\circ}C$		71		
Maximum Power Dissipation	$T_A = 25^{\circ}C$	P _D	8.3 ^{b, c}	w	
Operating Junction and Storage Temperature Range		T _J , T _{stg}	-55 to 175	°C	

THERMAL RESISTANCE RATINGS						
Parameter		Symbol	Typical	Maximum	Unit	
	$t \le 10$ sec.		15	18	°C/W	
Maximum Junction-to-Ambient ^b	Steady State	R _{thJA}	40	50		
Maximum Junction-to-Case		R _{thJC}	1.75	2.1		

Notes

a. Package Limited

b. Surface Mounted on 1" x 1" FR4 Board

c. $t \le 10 \text{ sec}$

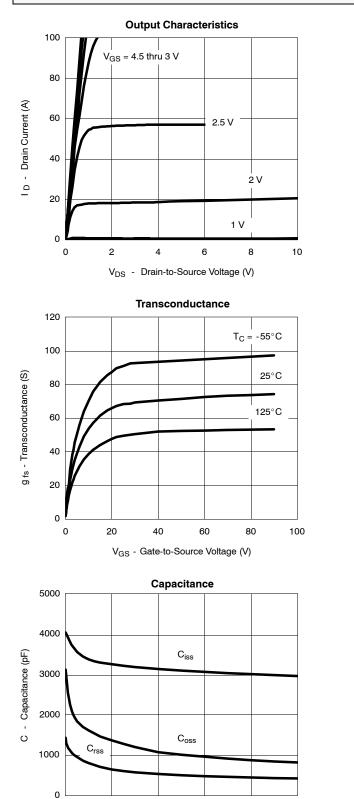
Parameter	Symbol	Test Condition	Min	Тур ^а	Max	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V_{GS} = 0 V, I_D = 250 μ A	20			v
Gate Threshold Voltage	V _{GS(th)}	$V_{DS} = V_{GS}$, $I_D = 250 \ \mu A$	0.5		1.5	v
Gate-Body Leakage	I _{GSS}	V_{DS} = 0 V, V_{GS} = \pm 12 V			±100	nA
		V_{DS} = 20 V, V_{GS} = 0 V			1	
Zero Gate Voltage Drain Current	DSS	V_{DS} = 20 V, V_{GS} = 0 V, T_{J} = 125 °C			50	μΑ
On-State Drain Current ^b	I _{D(on)}	V_{DS} = 5 V, V_{GS} = 4.5 V	100			А
		$V_{GS} = 4.5 \text{ V}, \text{ I}_{D} = 20 \text{ A}$ 0		0.0045		Ω
Drain-Source On-State Resistance ^b	r _{DS(on)}	V_{GS} = 4.5 V, I _D = 20 A, T _J = 125 °C		0.0055		
		V_{GS} = 2.5 V, I _D = 20 A		0.006		1
Forward Transconductanceb	9fs	$V_{DS} = 5 V, I_{D} = 40 A$	20			S
Dynamic ^a						
Input Capacitance	C _{iss}			3660		pF
Output Capacitance	C _{oss}	V_{GS} = 0 V, V_{DS} = 20 V, f = 1 MHz		730		
Reverse Transfer Capacitance	C _{rss}			375		
Total Gate Charge ^c	Qg			26	35	nC
Gate-Source Charge ^c	Q _{gs}	V_{DS} = 10 V, V_{GS} = 4.5 V, I_{D} = 40 A		5		
Gate-Drain Charge ^c	Q _{gd}			7		
Gate Resistance	Rg		1		3.7	Ω
Turn-On Delay Time ^c	t _{d(on)}			20	35	
Rise Time ^c	t _r	$\begin{array}{l} V_{DD} = 10 \; V, \; R_L = 0.25 \; \Omega \\ I_D \;\cong\; 40 \; A, \; V_{GEN} = 4.5 \; V, \; R_G = 2.5 \; \Omega \end{array}$		120	190	- ns
Turn-Off Delay Time ^c	t _{d(off)}	$I_D \cong 40$ Å, $V_{GEN} = 4.5$ V, $R_G = 2.5 \Omega$		45	70	
Fall Time ^c	t _f			20	35	
Source-Drain Diode Ratings ar	nd Characteristi	c (T _C = 25°C)				
Pulsed Current	I _{SM}				100	A
Diode Forward Voltage ^b	V _{SD}	I_{F} = 100 A, V_{GS} = 0 V		1.2	1.5	V
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 40 A, di/dt = 100 A/μs		35	70	ns

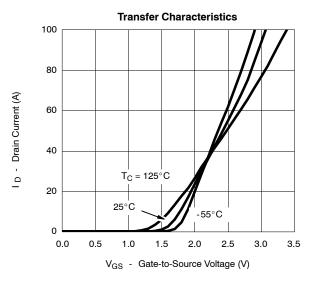
semi

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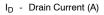


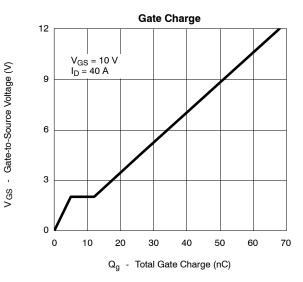
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)





On-Resistance vs. Drain Current 0.012 0.009 V_{GS} = 4.5 V V_{GS} = 4.5 V 0.000 0





0

4

8

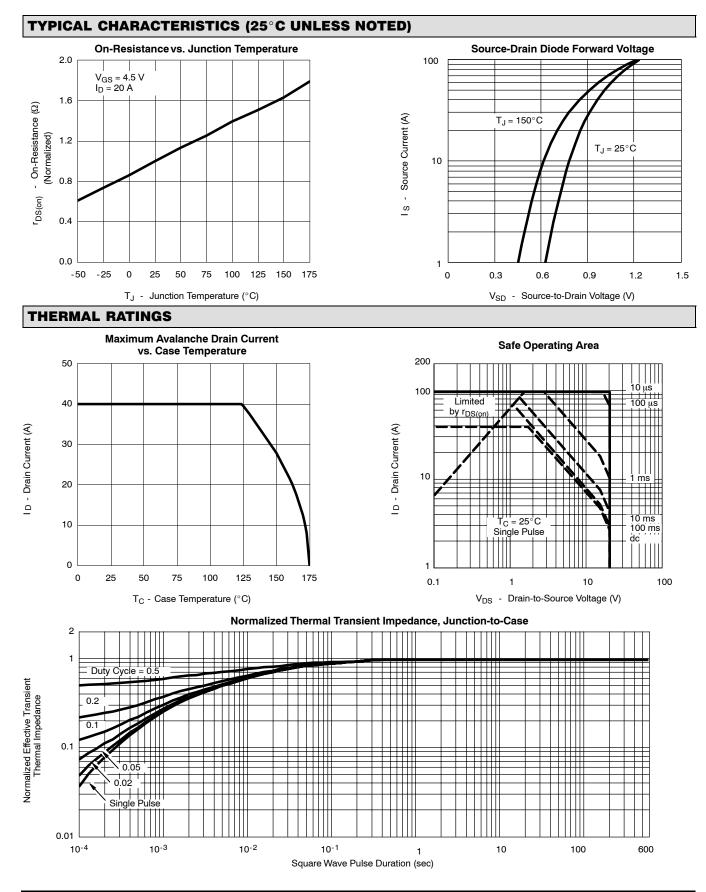
V_{DS} - Drain-to-Source Voltage (V)

12

16

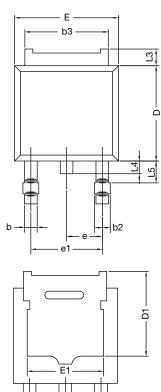
20

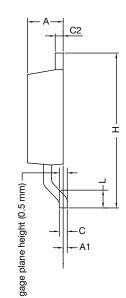






TO-252AA CASE OUTLINE





	MILLIN	IETERS	INCHES		
DIM.	MIN.	MAX.	MIN.	MAX.	
А	2.18	2.38	0.086	0.094	
A1	-	0.127	-	0.005	
b	0.64	0.88	0.025	0.035	
b2	0.76	1.14	0.030	0.045	
b3	4.95	5.46	0.195	0.215	
С	0.46	0.61	0.018	0.024	
C2	0.46	0.89	0.018	0.035	
D	5.97	6.22	0.235	0.245	
D1	5.21	-	0.205	-	
Е	6.35	6.73	0.250	0.265	
E1	4.32	-	0.170	-	
Н	9.40	10.41	0.370	0.410	
е	2.28	BSC	0.090 BSC		
e1	4.56	BSC	0.180 BSC		
L	1.40	1.78	0.055	0.070	
L3	0.89	1.27	0.035	0.050	
L4	-	1.02	-	0.040	
L5	1.14	1.52	0.045	0.060	
ECN: X12- DWG: 534	0247-Rev. M, 7	24-Dec-12			

Note

• Dimension L3 is for reference only.



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