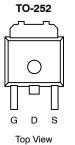


N-Channel 20-V (D-S)175 °C MOSFET

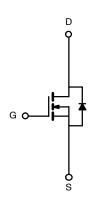
PRODUCT SUMMARY				
V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A) ^a		
00	0.0045 @ $V_{GS} = 4.5 V$	100		
20	0.006 @ V _{GS} = 2.5 V	90		

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	$T_{C} = 100^{\circ}C$		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°C	P _D	8.3 ^{b, c}			
Operating Junction and Storage Temperature Range		T _J , T _{stg}	-55 to 175	°C		

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

Notes

- a. Package Limited
- b. Surface Mounted on 1" x 1" FR4 Board
- $\text{c.}\quad t\,\leq\,10\,\,\text{sec}$

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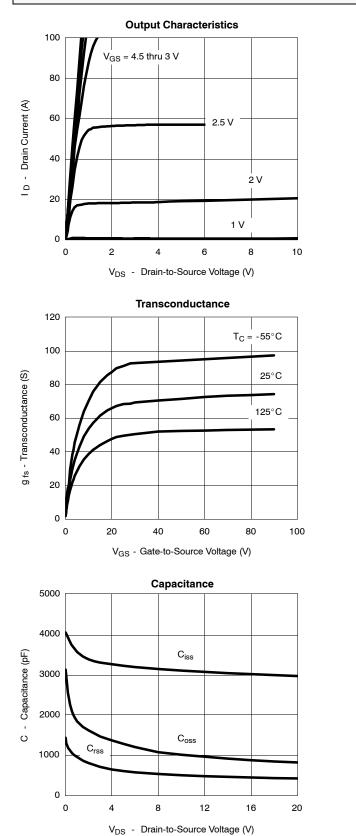
Parameter	Symbol	Test Condition Min		Тур ^а	Max	Unit	
Static							
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V_{GS} = 0 V, I_D = 250 μ A	20			v	
Gate Threshold Voltage	V _{GS(th)}	$V_{DS} = V_{GS}, I_D = 250 \ \mu A$	0.5		1.5	v	
Gate-Body Leakage	I _{GSS}	V_{DS} = 0 V, V_{GS} = ±12 V			±100	nA	
		$V_{DS} = 20 \text{ V}, V_{GS} = 0 \text{ V}$			1		
Zero Gate Voltage Drain Current	I _{DSS}	V_{DS} = 20 V, V_{GS} = 0 V, T_{J} = 125 $^{\circ}\text{C}$			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 V, I _D = 20 A		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			
		$V_{GS} = 2.5 \text{ V}, \text{ I}_{D} = 20 \text{ A}$		0.006		1	
Forward Transconductanceb	9fs	$V_{DS} = 5 \text{ V}, \text{ I}_{D} = 40 \text{ A}$	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		1	
Gate Resistance	Rg	1			3.7	Ω	
Turn-On Delay Time ^c	t _{d(on)}			20	35	- ns	
Rise Time ^c	tr	V_{DD} = 10 V, R_L = 0.25 Ω I _D \cong 40 A, V_{GEN} = 4.5 V, R_G = 2.5 Ω		120	190		
Turn-Off Delay Time ^c	t _{d(off)}	$I_D \cong$ 40 Å, V_{GEN} = 4.5 V, R_G = 2.5 Ω		45	70		
Fall Time ^c	t _f		_	20	35		
Source-Drain Diode Ratings an	d Characteristi	c (T _C = 25°C)					
Pulsed Current	I _{SM}				100	А	
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 _E = 40 A, di/dt = 100 A/μs		35	70	ns	

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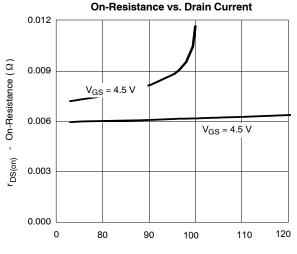


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

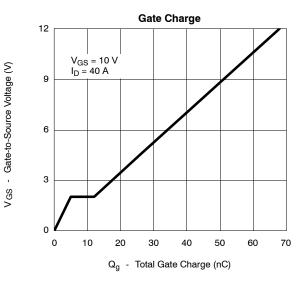


100 80 I D - Drain Current (A) 60 40 $T_C = 125^{\circ}C$ 20 25°C -55°C 0 0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 V_{GS} - Gate-to-Source Voltage (V)

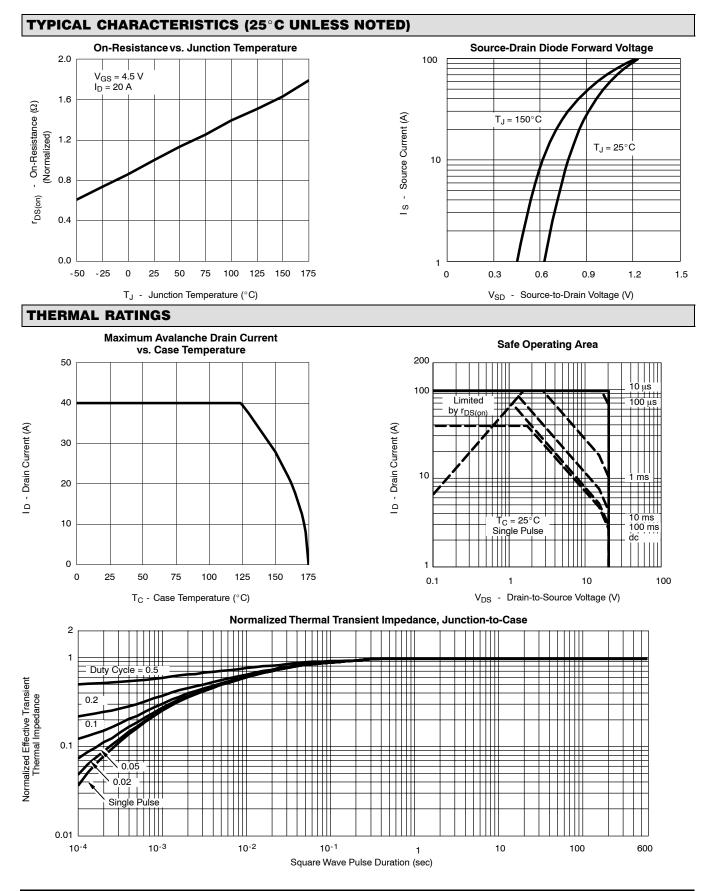
Transfer Characteristics





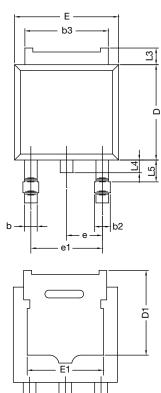


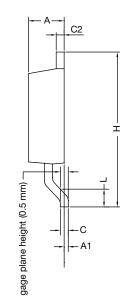






TO-252AA CASE OUTLINE





	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	-	
E	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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