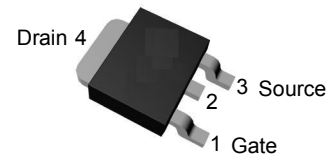


N-Channel Enhancement Mode MOSFET

Features

- 60V/75A,
 $R_{DS(ON)} = 7m\Omega$ (Typ.) @ $V_{GS} = 10V$
- Reliable and Rugged
- Lead Free and Green Devices Available
(RoHS Compliant)

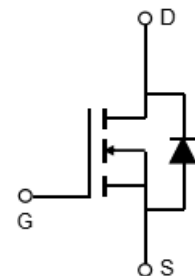
Pin Description



Top View of TO-252-3

Applications

- Power Management in Desktop Computer or DC/DC Converters.
- Power Load Switch.
- Notebook Battery Management.



N-Channel MOSFET

Absolute Maximum Ratings

Symbol	Parameter		Rating	Unit
Common Ratings (T _A =25 °C Unless Otherwise Noted)				
V _{DSS}	Drain-Source Voltage		60	V
V _{GSS}	Gate-Source Voltage		±25	
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-55 to 150	
I _S	Diode Continuous Forward Current	T _C =25°C	75	A
I _{DP}	300µs Pulse Drain Current Tested	T _C =25°C	290	
I _D	Continuous Drain Current	T _C =25°C	75	
		T _C =100°C	50	
P _D	Maximum Power Dissipation	T _C =25°C	110	W
		T _C =100°C	40	
R _{θJC}	Thermal Resistance-Junction to Case		2.5	°C/W
R _{θJA}	Thermal Resistance-Junction to Ambient		50	
E _{AS}	Avalanche Energy, Single Pulsed	L=1mH	460	mJ

Electrical Characteristics (T_A = 25°C Unless Otherwise Noted)

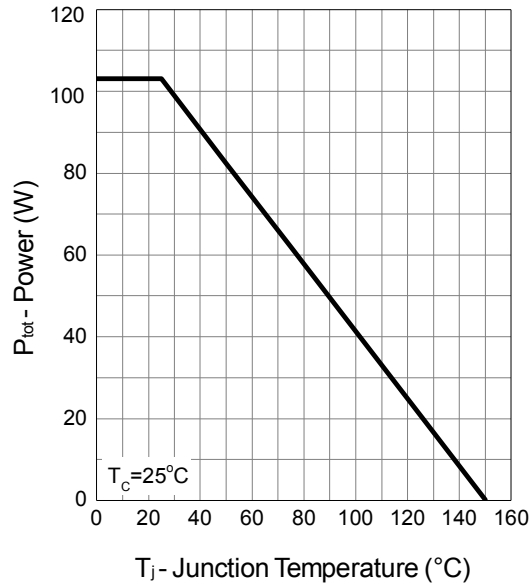
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =250μA	60	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =48V, V _{GS} =0V	-	-	1	μA
		T _J =85°C	-	-	30	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =250μA	2	3	4	V
I _{GSS}	Gate Leakage Current	V _{GS} =±25V, V _{DS} =0V	-	-	±100	nA
R _{DS(ON)} ^a	Drain-Source On-state Resistance	V _{GS} =10V, I _{DS} =20A	-	7	9	mΩ
Diode Characteristics						
V _{SD} ^a	Diode Forward Voltage	I _{SD} =20A, V _{GS} =0V	-	0.85	1.3	V
t _{rr}	Reverse Recovery Time	I _{SD} =20A,	-	45	-	ns
Q _{rr}	Reverse Recovery Charge	di _{SD} /dt= 100A/μs	-	60	-	nC
Dynamic Characteristics ^b						
R _G	Gate Resistance	V _{GS} =0V, V _{DS} =0V, F=1MHz	-	2	-	Ω
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =30V, Frequency=1.0MHz	-	2400	-	pF
C _{oss}	Output Capacitance		-	245	-	
C _{rss}	Reverse Transfer Capacitance		-	140	-	
t _{d(ON)}	Turn-on Delay Time	V _{DD} =30V, R _L =30Ω, I _{DS} =1A, V _{GEN} =10V, R _G =6Ω	-	20	30	ns
t _r	Turn-on Rise Time		-	18	33	
t _{d(OFF)}	Turn-off Delay Time		-	50	90	
t _f	Turn-off Fall Time		-	25	45	
Gate Charge Characteristics ^b						
Q _g	Total Gate Charge	V _{DS} =30V, V _{GS} =10V, I _{DS} =20A	-	45	63	nC
Q _{gs}	Gate-Source Charge		-	15	-	
Q _{gd}	Gate-Drain Charge		-	15	-	

Note a : Pulse test ; pulse width≤300μs, duty cycle≤2%.

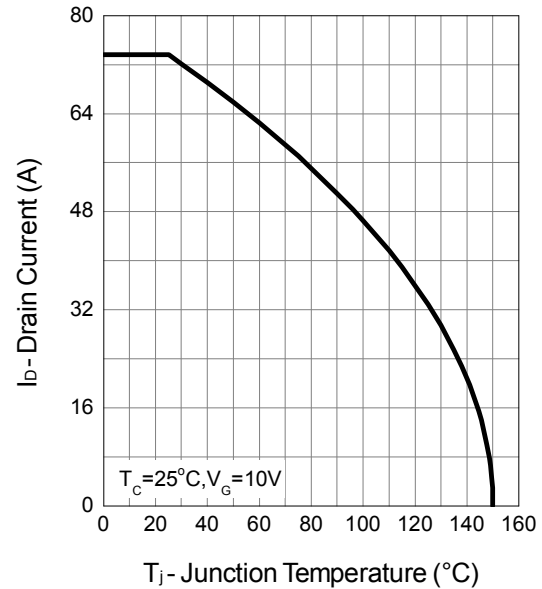
Note b : Guaranteed by design, not subject to production testing.

Typical Operating Characteristics

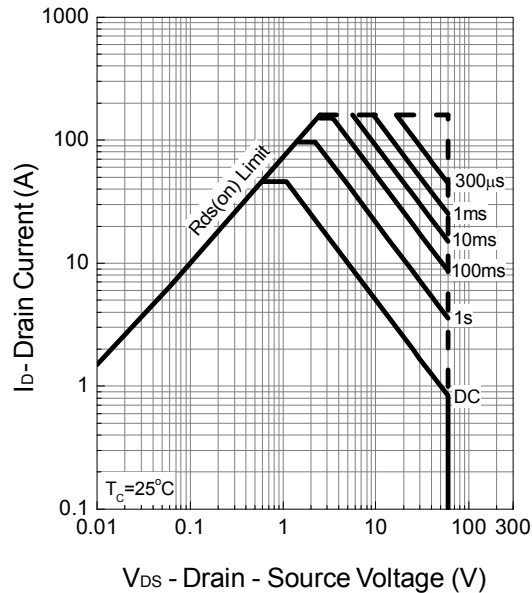
Power Dissipation



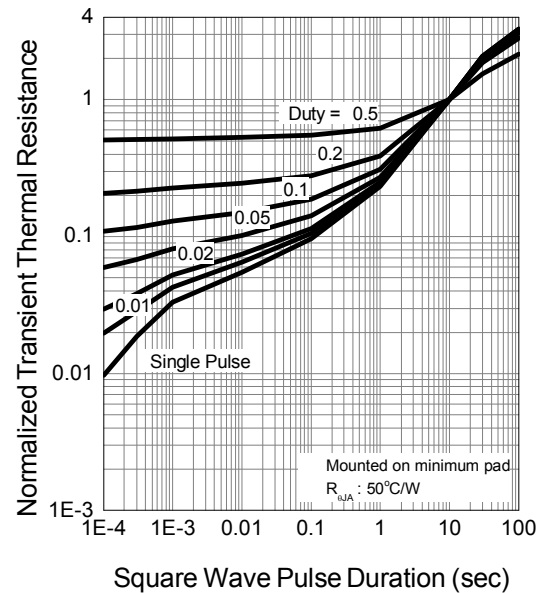
Drain Current



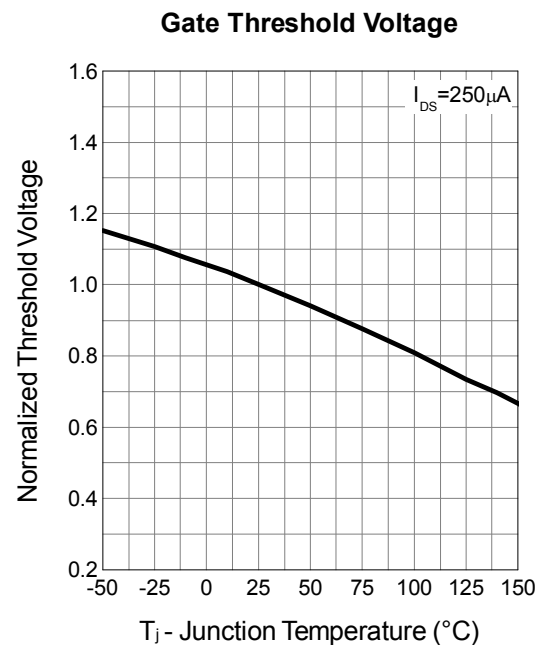
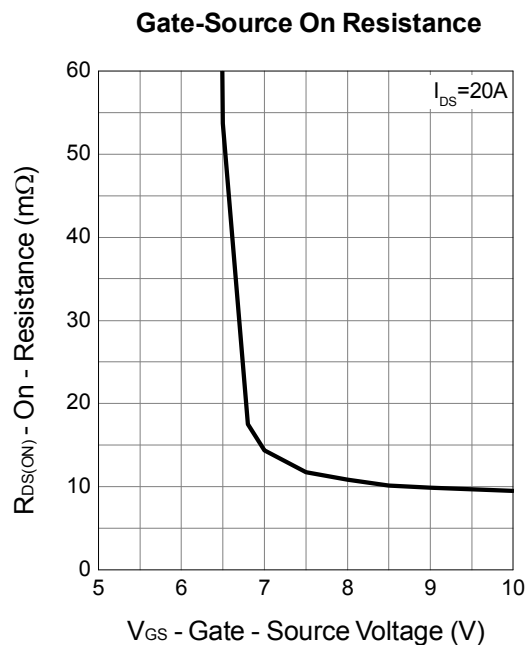
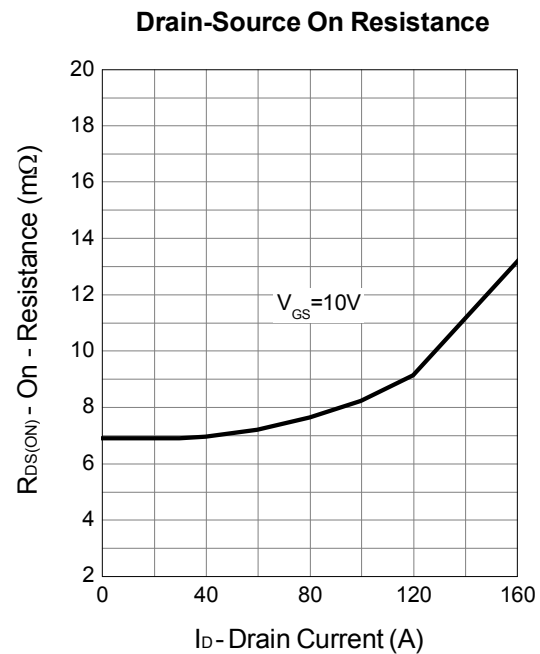
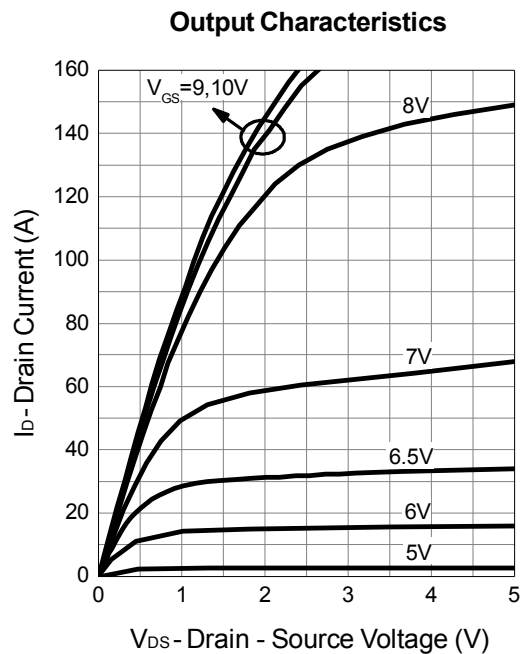
Safe Operation Area



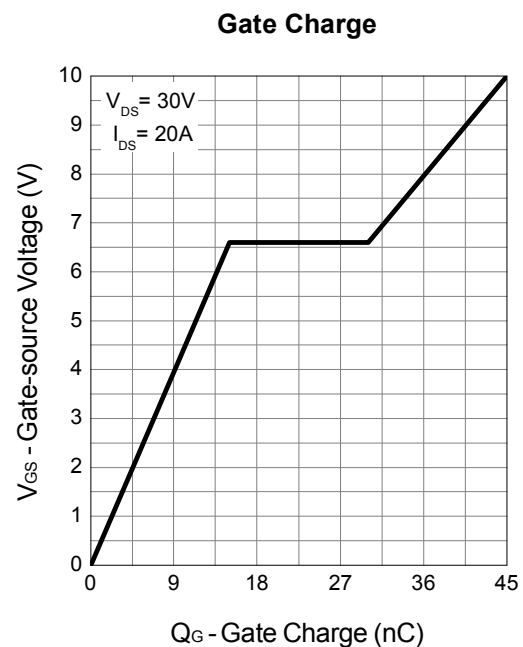
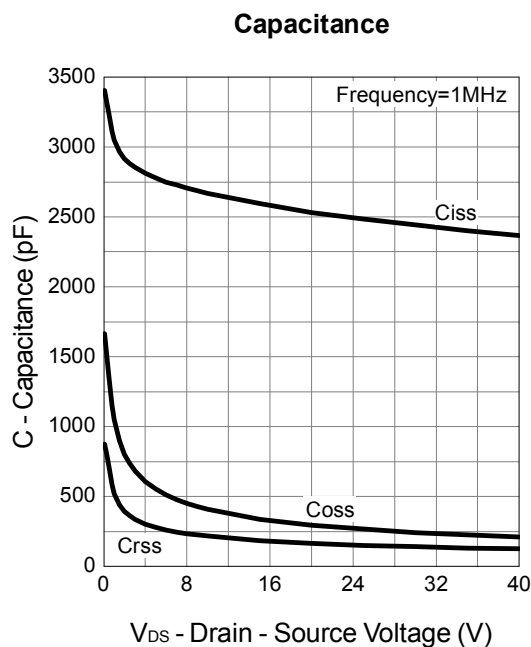
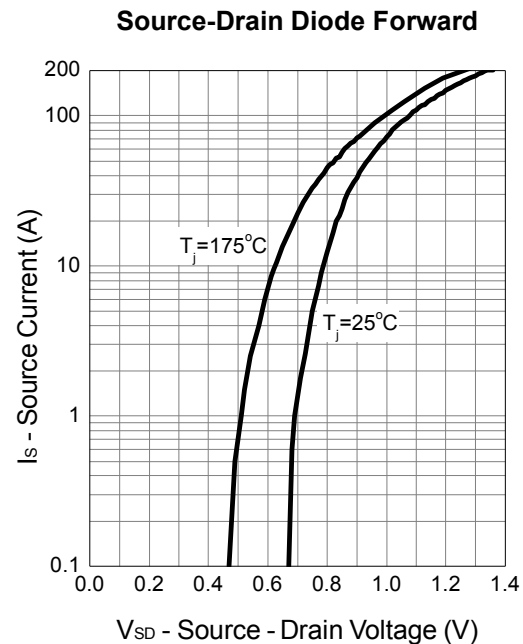
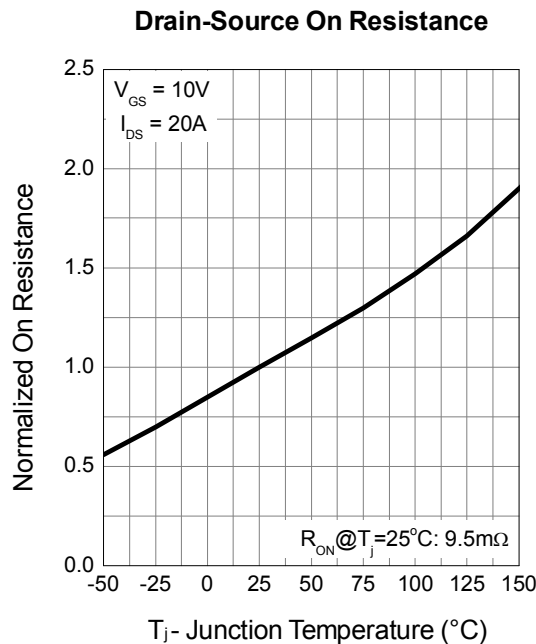
Thermal Transient Impedance



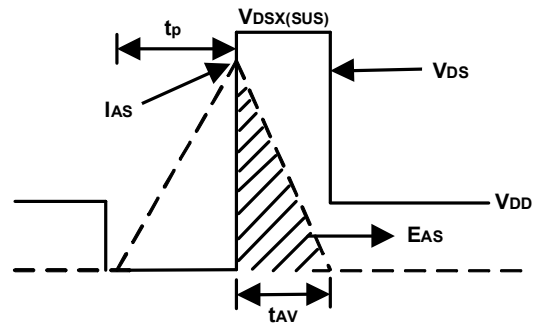
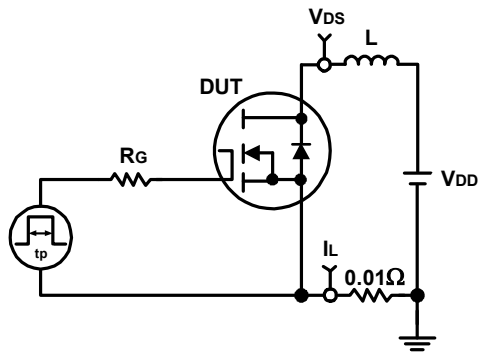
Typical Operating Characteristics (Cont.)



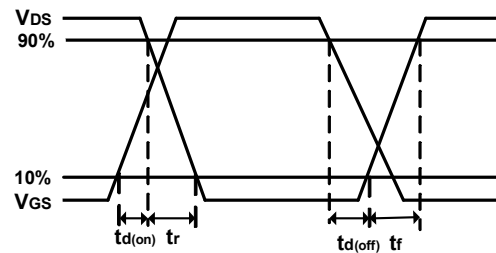
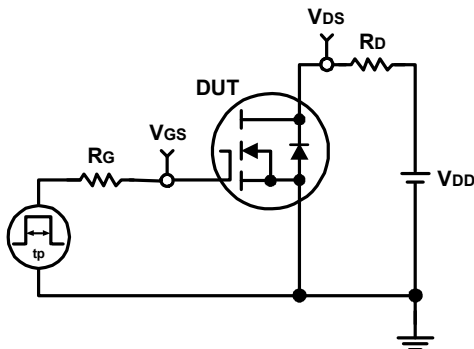
Typical Operating Characteristics (Cont.)



Avalanche Test Circuit and Waveforms

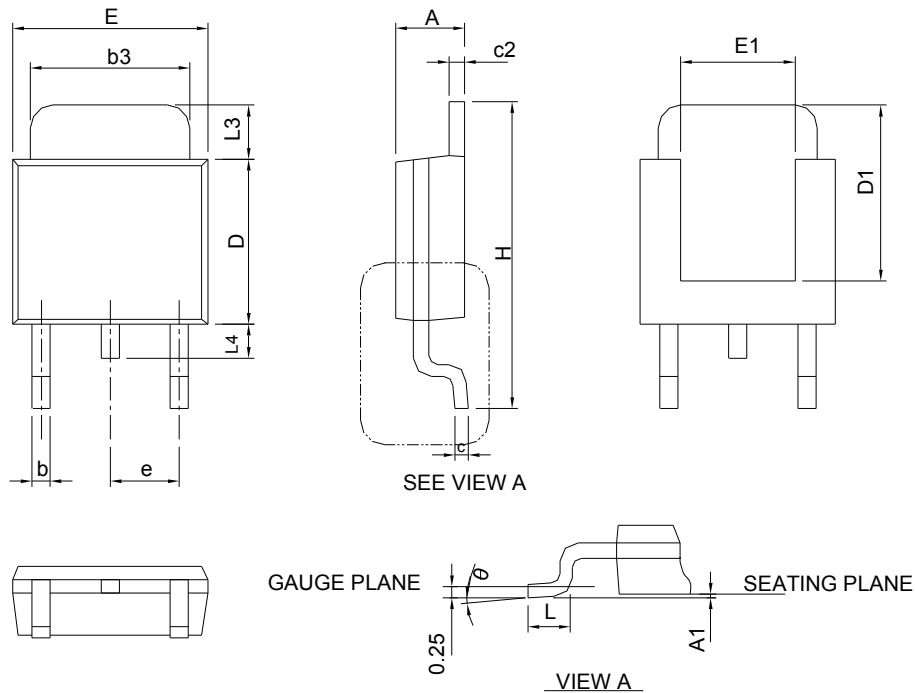


Switching Time Test Circuit and Waveforms



Package Information

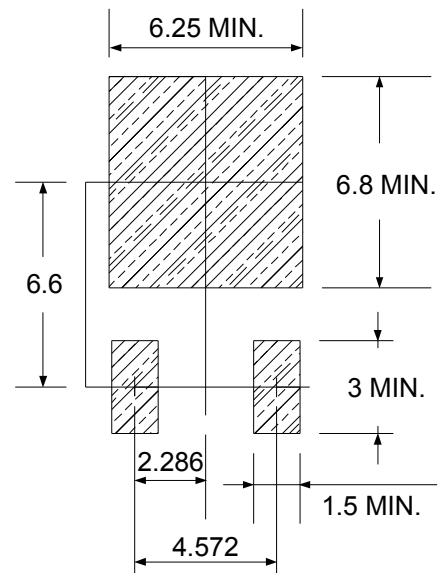
TO-252-2



	TO-252-2			
	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	2.18	2.39	0.086	0.094
A1	-	0.13	-	0.005
b	0.50	0.89	0.020	0.035
b3	4.95	5.46	0.195	0.215
c	0.46	0.61	0.018	0.024
c2	0.46	0.89	0.018	0.035
D	5.33	6.22	0.210	0.245
D1	4.57	6.00	0.180	0.236
E	6.35	6.73	0.250	0.265
E1	3.81	6.00	0.150	0.236
e	2.29 BSC		0.090 BSC	
H	9.40	10.41	0.370	0.410
L	0.90	1.78	0.035	0.070
L3	0.89	2.03	0.035	0.080
L4	-	1.02	-	0.040
θ	0°	8°	0°	8°

Note : Follow JEDEC TO-252 .

RECOMMENDED LAND PATTERN



UNIT: mm