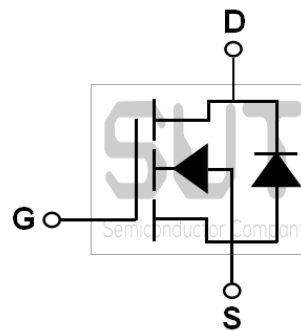
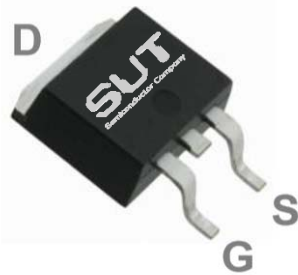


N-Channel 60-V_(D-S) MOSFET

PRODUCT SUMMARY		
B _{VDSS} (V)	R _{DS(on)} (mΩ)(MAX)	I _D (A)
60	75@V _{GS} =10V	11

TO252 Pin Configuration



ABSOLUTE MAXIMUM RATINGS(T_C=25°C UNLESS OTHERWISE NOTED)

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V _{DS}	60	V
Gate-Source Voltage	V _{GS}	±20	V
Drain Current-Continuous (T _C =25°C)	I _D	11	A
Drain Current-Continuous (T _C =100°C)		7.0	A
Drain Current-Pulsed ¹	I _{DM}	44	A
Single Pulse Avalanche Energy ²	EAS	25	mJ
Single Pulse Avalanche Current ²	IAS	7.0	A
Power Dissipation (T _C =25°C)	P _D	25	W
Power Dissipation-Derate above 25°C		0.2	W/°C
Storage Temperature Range	T _{STG}	-50 to 150	°C
Operating Junction Temperature Range	T _J	-50 to 150	°C

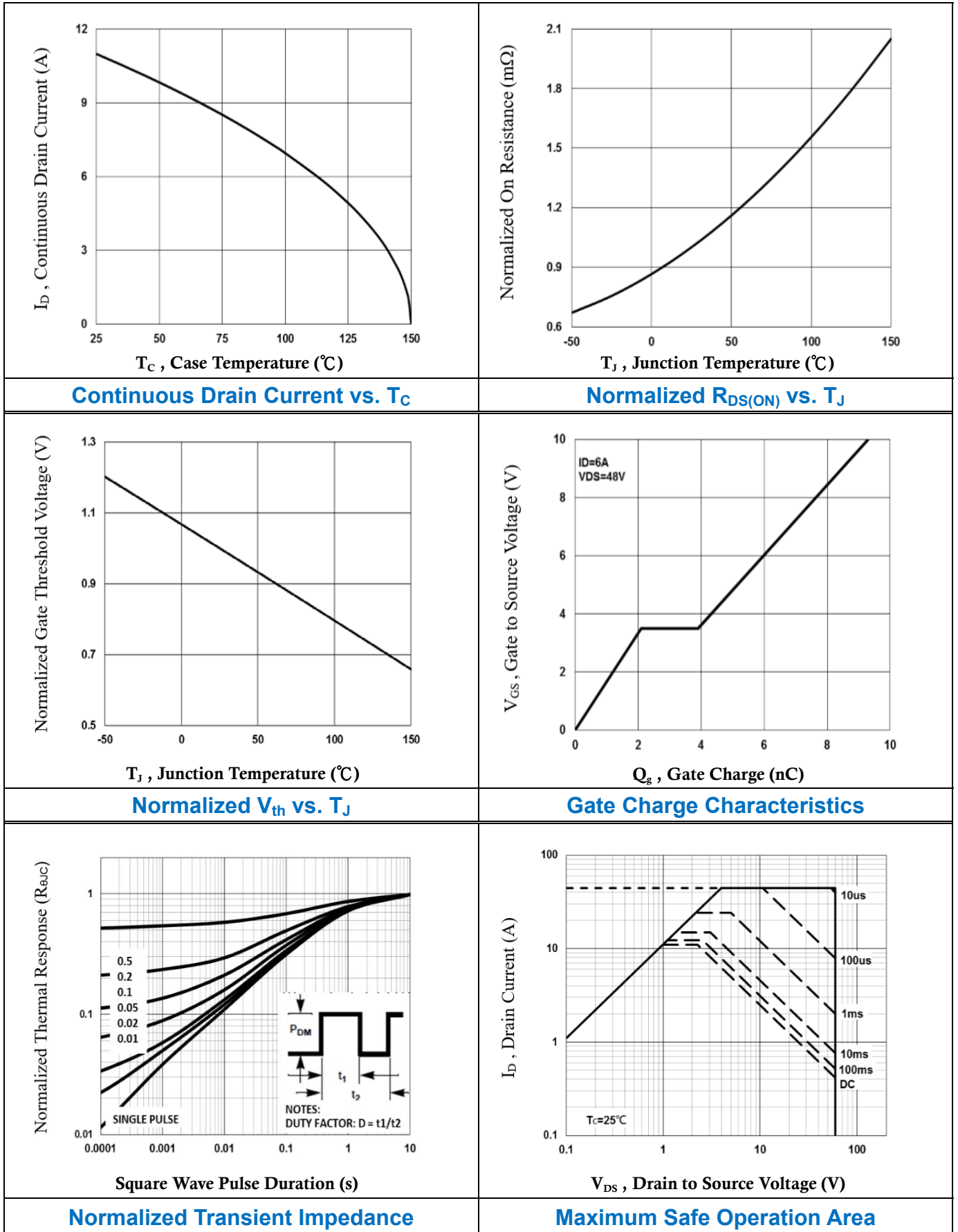
THERMAL CHARACTERISTICS

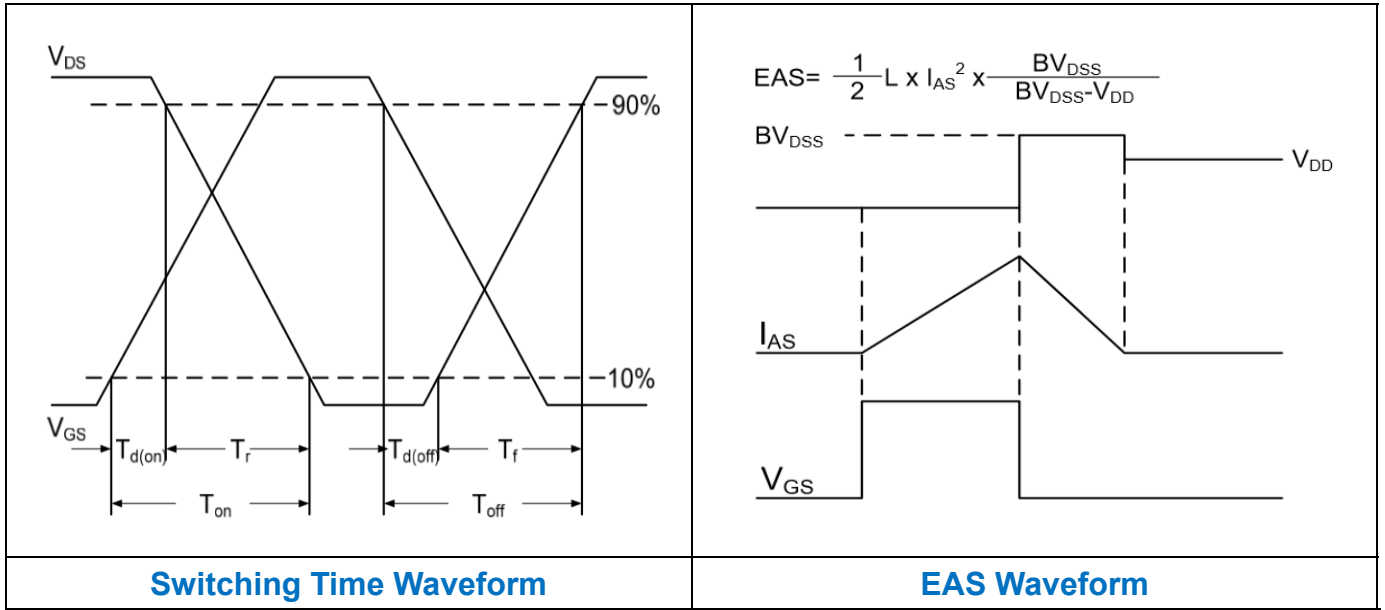
Parameter	Symbol	Typ.	Max.	Unit
Thermal Resistance Junction to ambient	R _{θJA}	---	62	°C/W
Thermal Resistance Junction to Case	R _{θJC}	---	5.0	°C/W

ELECTRICAL CHARACTERISTICS (T _J =25°C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250uA	60	---	---	V
BV _{DSS} Temperature Coefficient	ΔBV _{DSS} /ΔT _J	Reference to 25°C, I _D =1mA	---	0.05	---	V/°C
Drain-Source Leakage Current	I _{DSS}	V _{GS} =0V, V _{DS} =60V, T _J =25°C	---	---	1	uA
		V _{GS} =0V, V _{DS} =48V, T _J =125°C	---	---	10	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	---	---	±100	nA
On Characteristics						
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =6A	---	60	75	mΩ
		V _{GS} =4.5V, I _D =3A	---	70	90	mΩ
Gate Threshold Voltage	V _{GS(th)}	V _{GS} =V _{DS} , I _D =250uA	1.2	1.8	2.5	V
V _{GS(th)} Temperature Coefficient	ΔV _{GS(th)}		---	-5.0	---	mV/°C
Forward Transconductance	g _{fs}	V _{DS} =10V, I _D =3A	---	4.0	---	S
Dynamic and Switching Characteristics						
Total Gate Charge ^{2, 3}	Q _g	V _{GS} =10V, V _{DS} =48V, I _D =6A	---	9.3	13	nC
Gate-Source Charge ^{2, 3}	Q _{gs}		---	2.1	3.0	
Gate-Drain Charge ^{2, 3}	Q _{gd}		---	1.8	4.0	
Turn-On Delay Time ^{2, 3}	T _{d(on)}	V _{GS} =10V, V _{DD} =30V, R _G =3.3Ω, I _D =1A	---	2.9	6.0	ns
Rise Time ^{2, 3}	T _r		---	9.5	18	
Turn-Off Delay Time ^{2, 3}	T _{d(off)}		---	18.4	35	
Fall Time ^{2, 3}	T _f		---	5.3	10	
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =15V, F=1MHz	---	500	725	pF
Output Capacitance	C _{oss}		---	45	65	
Reverse Transfer Capacitance	C _{rss}		---	16	30	
Gate resistance	R _g	V _{GS} =0V, V _{DS} =0V, F=1MHz	---	2.0	4.0	Ω
Drain-Source Diode Characteristics and Maximum Ratings						
Continuous Source Current	I _S	V _G =V _D =0V, Force Current	---	---	11	A
Pulsed Source Current	I _{SM}		---	---	44	A
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =1A, T _J =25°C	---	---	1.0	V
Reverse Recovery Time ²	t _{rr}	V _{GS} =30V, I _S =1A, di/dt=100A/μs, T _J =25°C	---	23.2	---	ns
Reverse Recovery Charge ²	Q _{rr}		---	14.3	---	nC

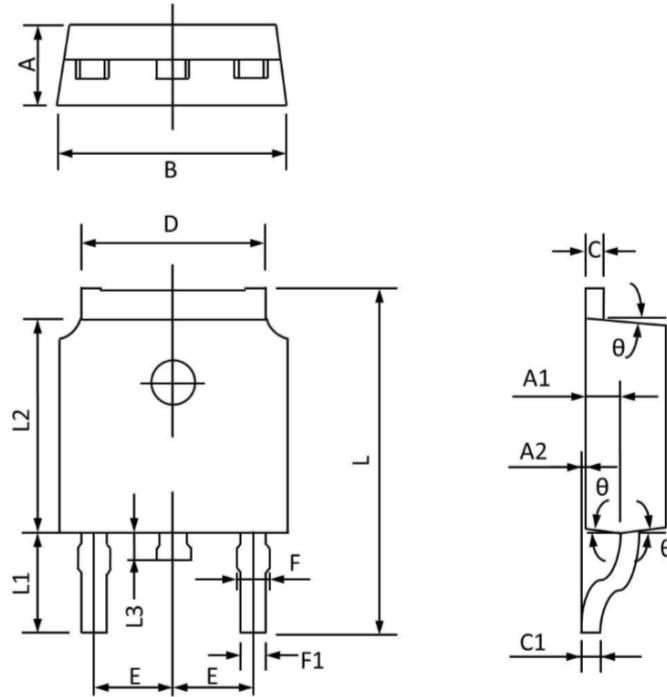
Note :

1. Repetitive Rating : Pulsed width limited by maximum junction temperature.
2. V_{GS}=10V, V_{DD}=25V, L=1mH, I_{AS}=7A, R_G=25Ω, Starting T_J=25°C.
3. The data tested by pulsed, pulse width ≤ 300us, duty cycle ≤ 2%.
4. Essentially independent of operating temperature.





TO252 PACKAGE INFORMATION



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MAX	MIN	MAX	MIN
A	2.400	2.200	0.094	0.087
A1	1.110	0.910	0.044	0.036
A2	0.150	0.000	0.006	0.000
B	6.700	6.500	0.264	0.256
C	0.580	0.460	0.230	0.018
C1	0.580	0.460	0.030	0.018
D	5.460	5.100	0.215	0.201
E	2.386	2.186	0.094	0.086
F	0.940	0.740	0.037	0.029
F1	0.860	0.660	0.034	0.026
L	10.400	9.800	0.409	0.386
L1	2.900(REF)		0.114(REF)	
L2	6.200	6.000	0.244	0.236
L3	1.000	0.600	0.039	0.024
θ	9°	3°	9°	3°