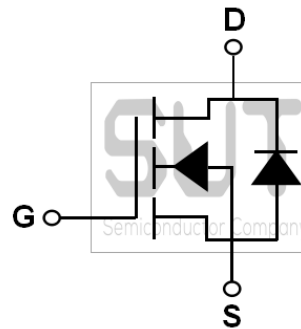
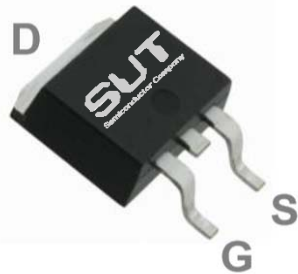


N-Channel 40-V_(D-S) MOSFET

PRODUCT SUMMARY		
B _{VDSS} (V)	R _{DS(on)} (mΩ)(MAX)	I _D (A)
40	8.5@V _{GS} =10V	50

TO252 Pin Configuration



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

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V _{DS}	40	V
Gate-Source Voltage	V _{GS}	±20	V
Drain Current-Continuous (T _C =25°C)	I _D	50	A
Drain Current-Continuous (T _C =100°C)		31.6	A
Drain Current-Pulsed ¹	I _{DM}	200	A
Power Dissipation (T _C =25°C)	P _D	54	W
Power Dissipation-De-rate above 25°C		0.43	W/°C
Storage Temperature Range	T _{STG}	-55 to 150	°C
Operating Junction Temperature Range	T _J	-55 to 150	°C

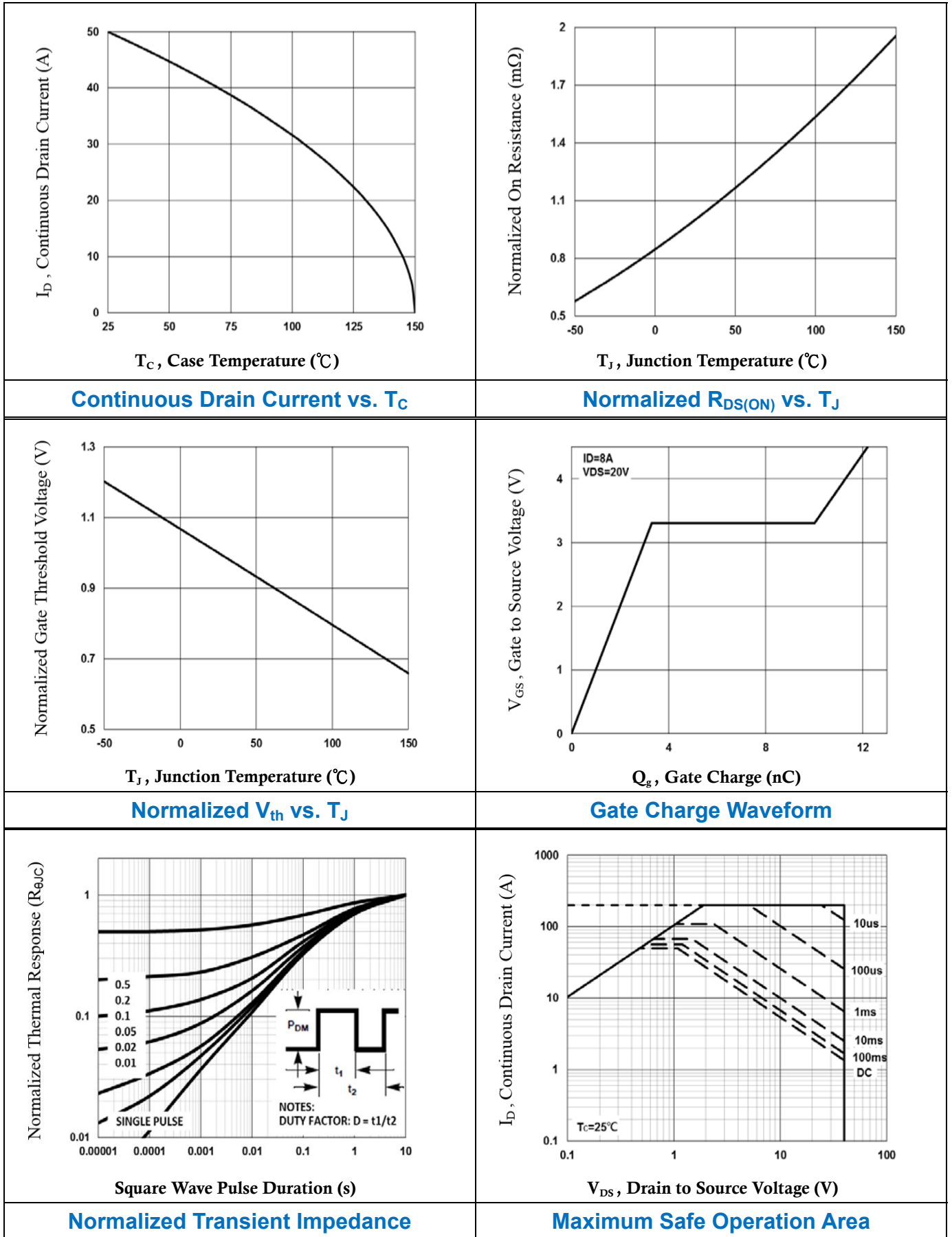
THERMAL CHARACTERISTICS

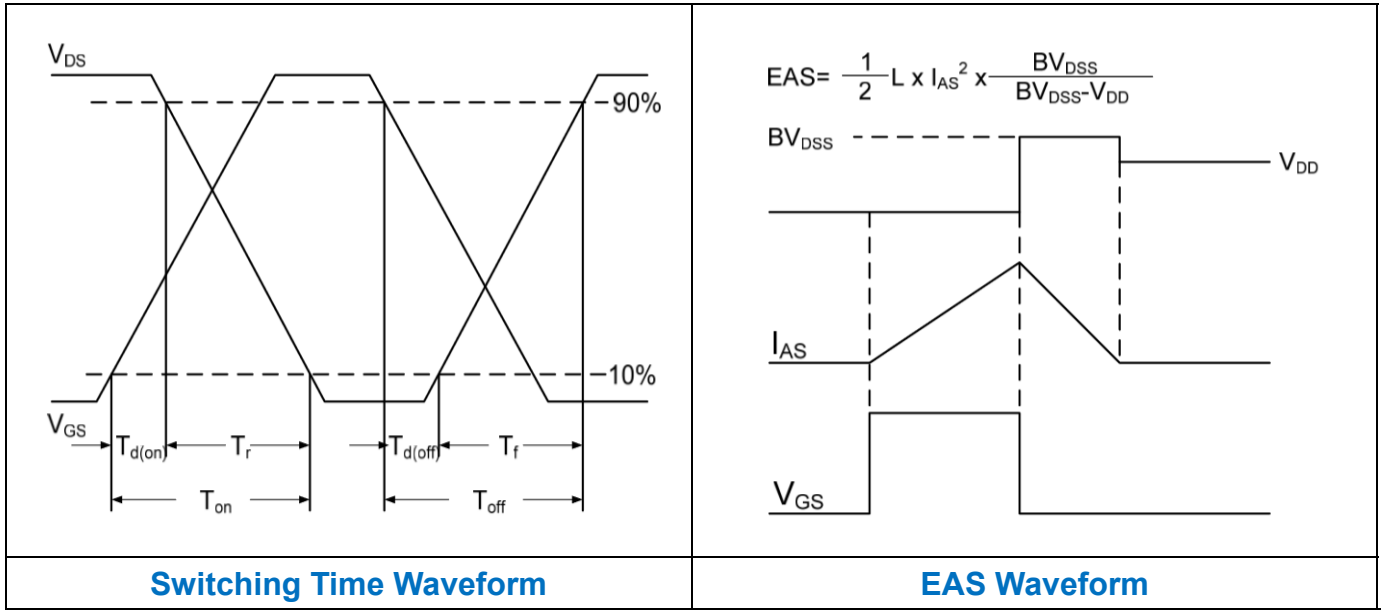
Parameter	Symbol	Typ.	Max.	Unit
Thermal Resistance Junction to ambient	R _{θJA}	---	62	°C/W
Thermal Resistance Junction to Case	R _{θJC}	---	2.31	°C/W

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	40	---	---	V
BV _{DSS} Temperature Coefficient	ΔBV _{DSS} /ΔT _J	Reference to 25°C, I _D =1mA	---	0.03	---	V/°C
Drain-Source Leakage Current	I _{DSS}	V _{GS} =0V, V _{DS} =40V, T _J =25°C	---	---	1	uA
		V _{GS} =0V, V _{DS} =32V, T _J =85°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 =8A	---	6.5	8.5	mΩ
		V _{GS} =4.5V, I _D =4A	---	9.0	12	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 =10A	---	13	---	S
Dynamic and Switching Characteristics						
Total Gate Charge ^{2, 3}	Q _g	V _{GS} =4.5V, V _{DS} =20V, I _D =8A	---	12.2	24	nC
Gate-Source Charge ^{2, 3}	Q _{gs}		---	3.3	7.0	
Gate-Drain Charge ^{2, 3}	Q _{gd}		---	6.7	13	
Turn-On Delay Time ^{2, 3}	T _{d(on)}	V _{GS} =10V, V _{DD} =15V, R _G =3.3Ω, I _D =1A	---	13.2	25	ns
Rise Time ^{2, 3}	T _r		---	2.2	5.0	
Turn-Off Delay Time ^{2, 3}	T _{d(off)}		---	72	130	
Fall Time ^{2, 3}	T _f		---	4.5	10	
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =25V, F=1MHz	---	1220	2200	pF
Output Capacitance	C _{oss}		---	130	250	
Reverse Transfer Capacitance	C _{rss}		---	55	110	
Gate resistance	R _g	V _{GS} =0V, V _{DS} =0V, F=1MHz	---	2.2	---	Ω
Drain-Source Diode Characteristics and Maximum Ratings						
Continuous Source Current	I _S	V _G =V _D =0V, Force Current	---	---	50	A
Pulsed Source Current	I _{SM}		---	---	100	A
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =1A, T _J =25°C	---	---	1.0	V
Reverse Recovery Time ³	t _{rr}	V _{GS} =0V, I _S =1A, dI/dt=100A/μs, T _J =25°C	---	17	---	ns
Reverse Recovery Charge ³	Q _{rr}		---	2.8	---	nC

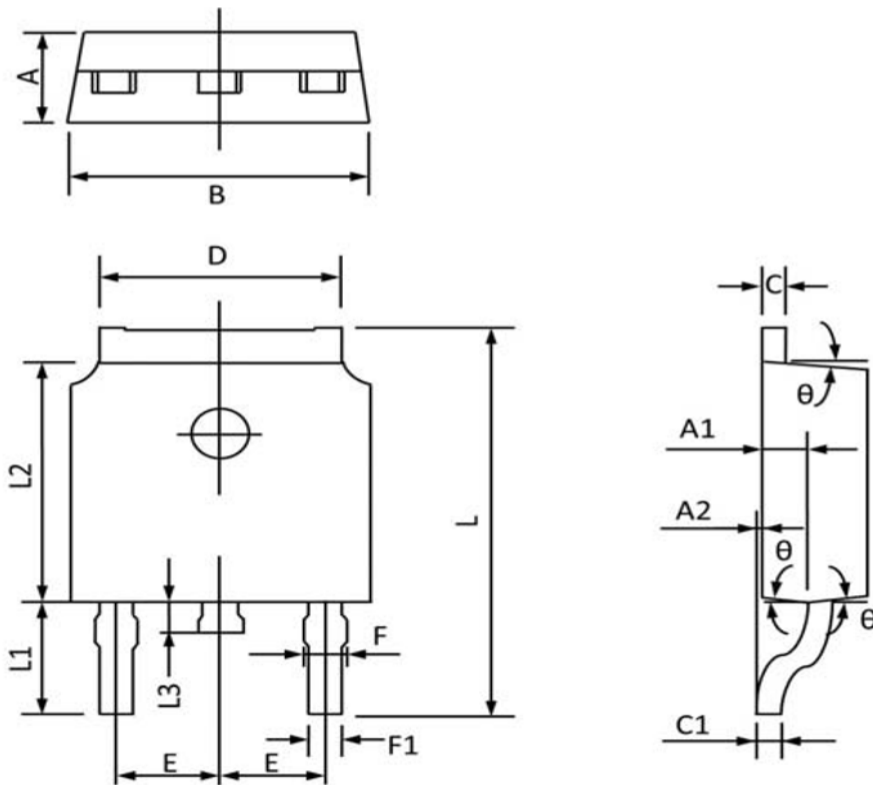
Note :

1. Repetitive Rating : Pulsed width limited by maximum junction temperature.
2. The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%.
3. 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	0.023	0.018
C1	0.580	0.460	0.023	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°