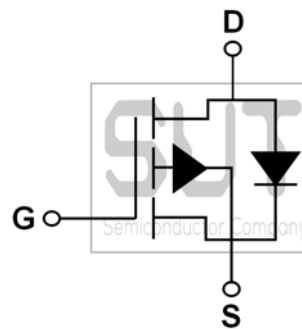
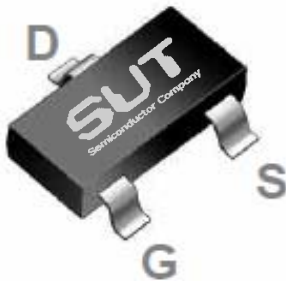


## P-Channel 20-V<sub>(D-S)</sub> MOSFET

PRODUCT SUMMARY		
B <sub>VDSS</sub> (V)	R <sub>DS(on)</sub> (mΩ)(MAX)	I <sub>D</sub> (A)
-20	110@V <sub>GS</sub> =-4.5V	-3.2

### SOT23 Pin Configuration



### ABSOLUTE MAXIMUM RATINGS(T<sub>C</sub>=25°C UNLESS OTHERWISE NOTED)

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V <sub>DS</sub>	-20	V
Gate-Source Voltage	V <sub>GS</sub>	±8.0	V
Drain Current-Continuous (T <sub>C</sub> =25°C)	I <sub>D</sub>	-3.2	A
Drain Current-Continuous (T <sub>C</sub> =100°C)		-2.1	A
Drain Current-Pulsed <sup>1</sup>	I <sub>DM</sub>	-13.2	A
Power Dissipation (T <sub>C</sub> =25°C)	P <sub>D</sub>	1.56	W
Power Dissipation-Derate above 25°C		0.012	W/°C
Storage Temperature Range	T <sub>STG</sub>	-55 to 150	°C
Operating Junction Temperature Range	T <sub>J</sub>	-55 to 150	°C

### THERMAL CHARACTERISTICS

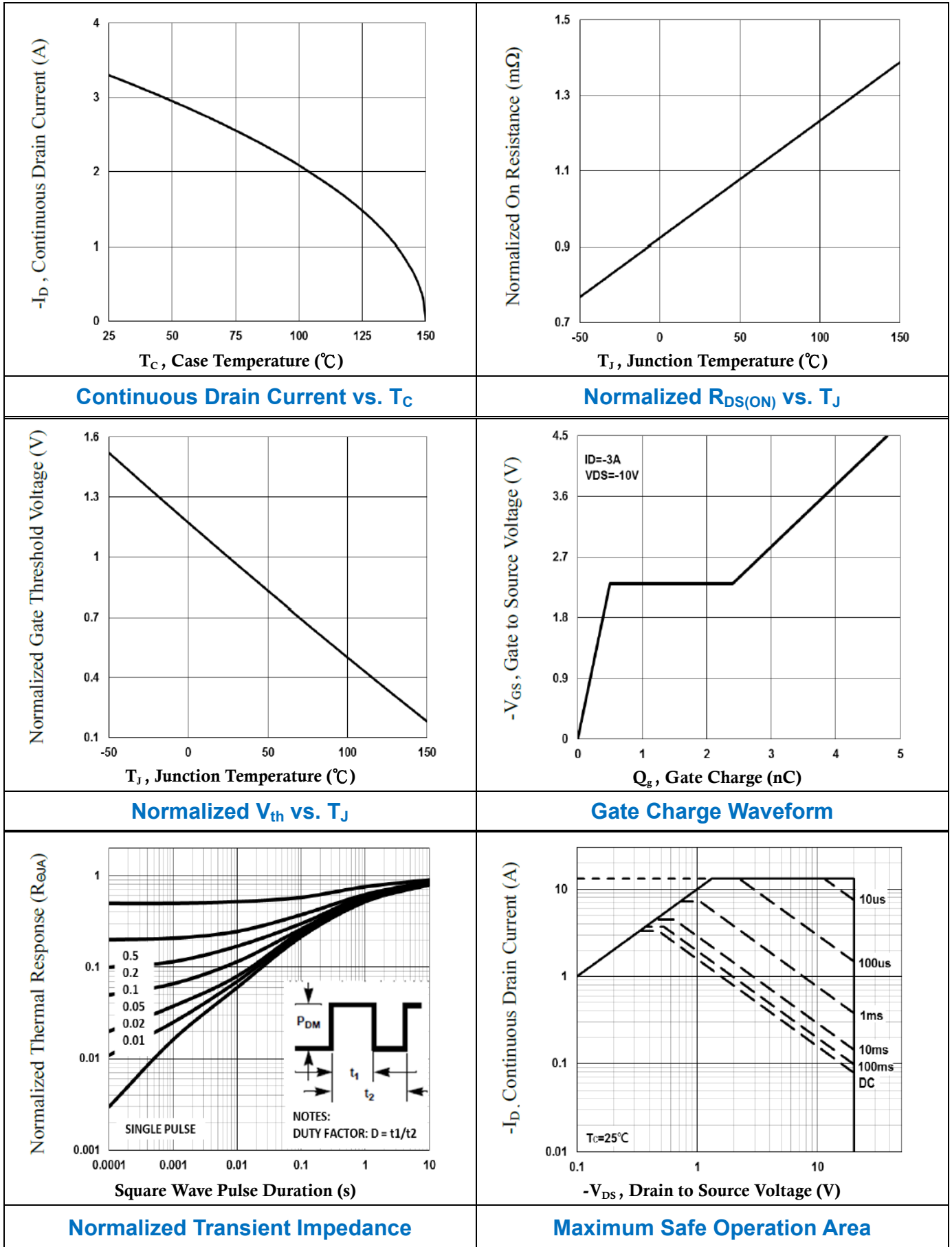
Parameter	Symbol	Typ.	Max.	Unit
Thermal Resistance Junction to ambient	R <sub>θJA</sub>	---	80	°C/W

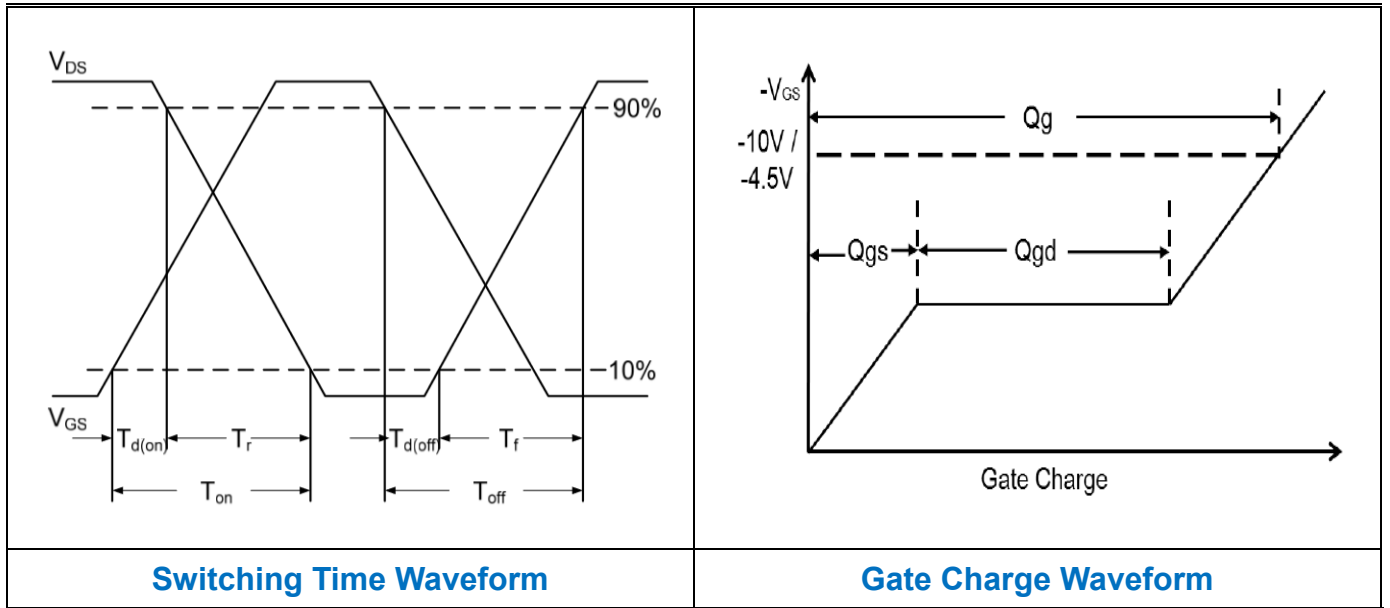
ELECTRICAL CHARACTERISTICS (T <sub>J</sub> =25°C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
<b>Off Characteristics</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =-250uA	-20	---	---	V
BV <sub>DSS</sub> Temperature Coefficient	ΔBV <sub>DSS</sub> /ΔT <sub>J</sub>	Reference to 25°C, I <sub>D</sub> =-1mA	---	-0.01	---	V/°C
Drain-Source Leakage Current	I <sub>DSS</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =-20V, T <sub>J</sub> =25°C	---	---	-1	uA
		V <sub>GS</sub> =0V, V <sub>DS</sub> =-16V, T <sub>J</sub> =125°C	---	---	-10	uA
Gate-Source Leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±10V	---	---	±100	nA
<b>On Characteristics</b>						
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-2.8A	---	85	110	mΩ
		V <sub>GS</sub> =-2.5V, I <sub>D</sub> =-2A	---	110	150	mΩ
		V <sub>GS</sub> =-1.8V, I <sub>D</sub> =-1A	---	197	230	mΩ
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> =-250uA	-0.5	-0.7	-1.4	V
V <sub>GS(th)</sub> Temperature Coefficient	ΔV <sub>GS(th)</sub>		---	3.0	---	mV/°C
Forward Transconductance	g <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-1A	---	2.2	---	S
<b>Dynamic and Switching Characteristics</b>						
Total Gate Charge <sup>2, 3</sup>	Q <sub>g</sub>	V <sub>GS</sub> =-4.5V, V <sub>DS</sub> =-10V, I <sub>D</sub> =-3A	---	4.8	8.0	nC
Gate-Source Charge <sup>2, 3</sup>	Q <sub>gs</sub>		---	0.5	1.0	
Gate-Drain Charge <sup>2, 3</sup>	Q <sub>gd</sub>		---	1.9	4.0	
Turn-On Delay Time <sup>2, 3</sup>	T <sub>d(on)</sub>	V <sub>GS</sub> =-4.5V, V <sub>DD</sub> =-10V, R <sub>G</sub> =25Ω, I <sub>D</sub> =-1A	---	3.5	7.0	ns
Rise Time <sup>2, 3</sup>	T <sub>r</sub>		---	12.6	24	
Turn-Off Delay Time <sup>2, 3</sup>	T <sub>d(off)</sub>		---	32.6	62	
Fall Time <sup>2, 3</sup>	T <sub>f</sub>		---	8.4	16	
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =-15V, F=1MHz	---	350	510	pF
Output Capacitance	C <sub>oss</sub>		---	65	95	
Reverse Transfer Capacitance	C <sub>rss</sub>		---	50	75	
<b>Drain-Source Diode Characteristics and Maximum Ratings</b>						
Continuous Source Current	I <sub>S</sub>	V <sub>G</sub> =V <sub>D</sub> =0V, Force Current	---	---	-3.2	A
Pulsed Source Current	I <sub>SM</sub>		---	---	-12.8	A
Diode Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =-1A, T <sub>J</sub> =25°C	---	---	-1.0	V

Note :

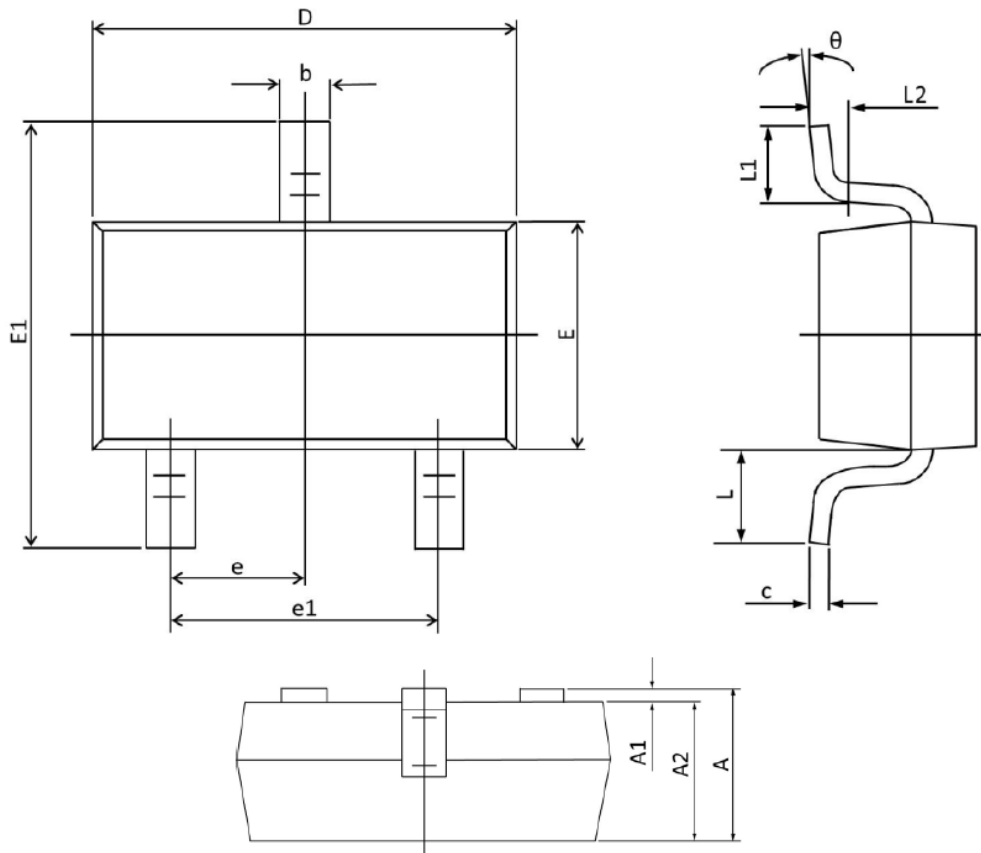
1. Repetitive Rating : Pulsed width limited by maximum junction temperature.
2. The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%.
3. Essentially independent of operating temperature.

20V P-Channel MOSFETs





### SOT23 PACKAGE INFORMATION



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MAX	MIN	MAX	MIN
A	1.150	0.900	0.045	0.035
A1	0.100	0.000	0.004	0.000
A2	1.050	0.900	0.041	0.035
b	0.500	0.300	0.020	0.012
c	0.150	0.080	0.006	0.003
D	3.000	2.800	0.118	0.110
E	1.400	1.200	0.055	0.047
E1	2.550	2.250	0.100	0.089
e	0.950(TYP)		0.037(TYP)	
e1	2.000	1.800	0.079	0.071
L	0.550(REF)		0.022(REF)	
L1	0.500	0.300	0.020	0.012
L2	0.250(TYP)		0.010(TYP)	
$\theta$	8°	0°	8°	0°