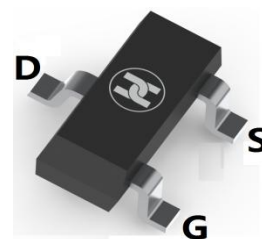
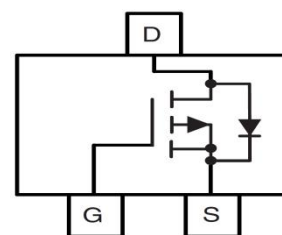


HIGH VOLTAGE MOSFET (P-CHANNEL)
FEATURES

- $V_{DS}=-100V, R_{DS(ON)}\leq 1\Omega @ V_{GS}=-10V, I_D=-0.70A$
- Low on-resistance, Low threshold and Low gate drive
- Fast switching speed
- For DC-DC Converters or Power Management functions
- For Disconnect switches or Motor control applications
- Surface Mount device


SOT-23

MECHANICAL DATA

- Case: SOT-23
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Weight: 0.008 grams (approximate)

MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	-100	V
Gate-source voltage	V_{GS}	± 20	V
Continuous drain current	I_D	-0.7	A
Pulsed drain current	I_{DM}	-3.1	A
Continuous Source Current (Body Diode)	I_S	-1.1	A
Pulsed Source Current (Body Diode)	I_{SM}	-3.1	A
Power dissipation	P_D	0.625	W
Junction to Ambient	$R_{\theta JA}$	200	$^\circ\text{C/W}$
Junction temperature	T_J	150	$^\circ\text{C}$
Storage temperature	T_{STG}	-55 ~ +150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Drain-Source breakdown voltage	$V_{(BR)DSS}$	-100			V	$V_{GS}=0V, I_D=-250\mu A$
Zero gate voltage drain current	I_{DSS}			-1	μA	$V_{DS}=-100V, V_{GS}=0V$
Gate-body leakage current	I_{GSS}			-100	nA	$V_{DS}=0V, V_{GS}=\pm 20V$
Gate-threshold voltage	$V_{GS(th)}$	-2.0		-4.0	V	$V_{DS}=V_{GS}, I_D=-250\mu A$
Drain-source on-resistance (1)	$R_{DS(ON)}$			1	Ω	$V_{GS}=-10V, I_D=-0.6A$
				1.45	Ω	$V_{GS}=-6V, I_D=-0.5A$
Forward Trans-conductance (1) (3)	g_{fs}		1.2		S	$V_{DS}=-15V, I_D=-0.6A$
Input capacitance(3)	C_{iss}		141		pF	$V_{DS}=-50V, V_{GS}=0V, f=1\text{MHz}$
Output capacitance(3)	C_{oss}		13.1		pF	
Reverse transfer capacitance(3)	C_{rss}		10.8		pF	
Turn-on delay time(2)(3)	$t_{d(on)}$		1.6		nS	
Turn-on rise time(2)(3)	t_r		2.1		nS	$V_{DD}=-50V, I_D=-1A, R_G = 6.0\Omega, V_{GS} = -10V$
Turn-off delay time(2)(3)	$t_{d(off)}$		5.9		nS	
Turn-off fall time(2)(3)	t_f		3.3		nS	
Gate Charge(2)(3)	Q_g		1.8		nC	$V_{DS} = -50V, V_{GS} = -5V, I_D = -0.6A$
Total Gate Charge(2)(3)	Q_g		3.5		nC	$V_{DS} = -50V, V_{GS} = -10V, I_D = -0.6A$
Gate-Source Charge(2)(3)	Q_{gs}		0.6		nC	
Gate-Drain Charge(2)(3)	Q_{gd}		1.6		nC	
Diode Forward Voltage(1)	V_{SD}		-0.85	-0.95	V	$T_J=25^\circ\text{C}, I_S = -0.75A, V_{GS}=0V$
Reverse Recovery Time(3)	t_{rr}		29		ns	$T_J=25^\circ\text{C}, I_S=-0.9A, di/dt=100A/\mu s$
Reverse Recovery Charge(3)	Q_{rr}		31		nC	

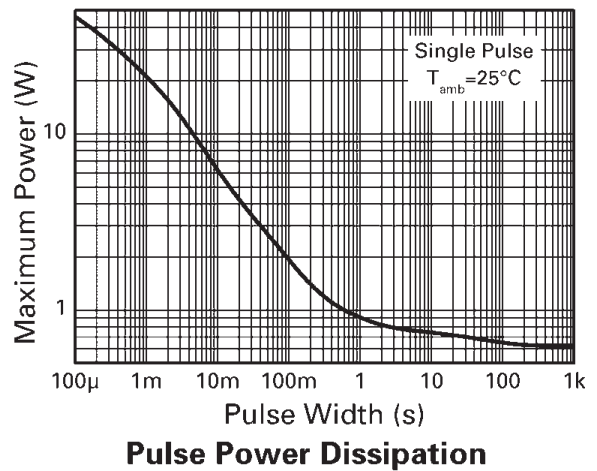
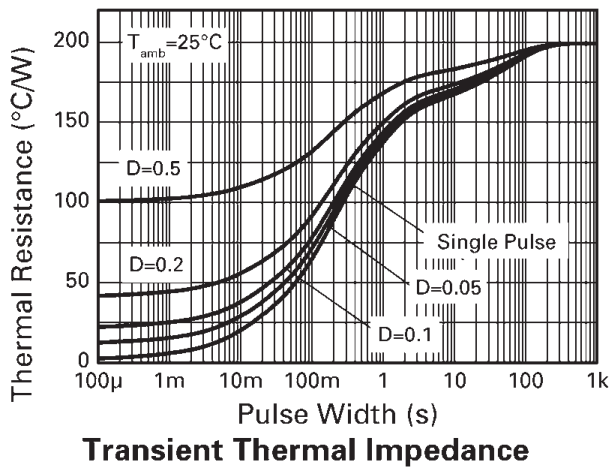
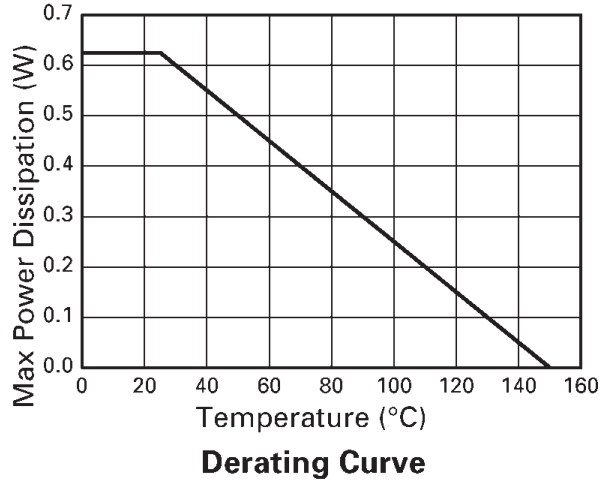
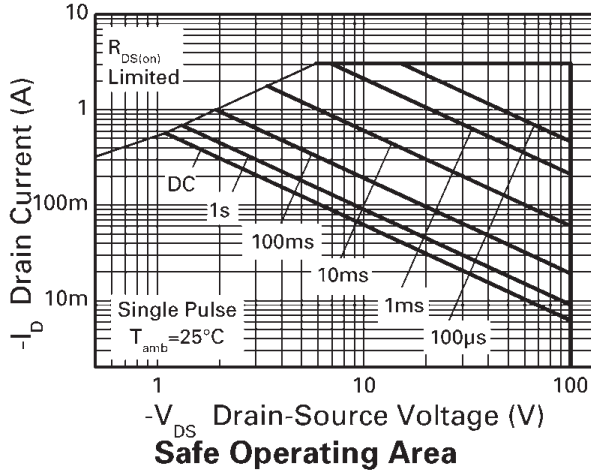
Note:(1) Measured under pulsed conditions. Width=300 μs . Duty cycle $\leq 2\%$.

(2) Sample test.

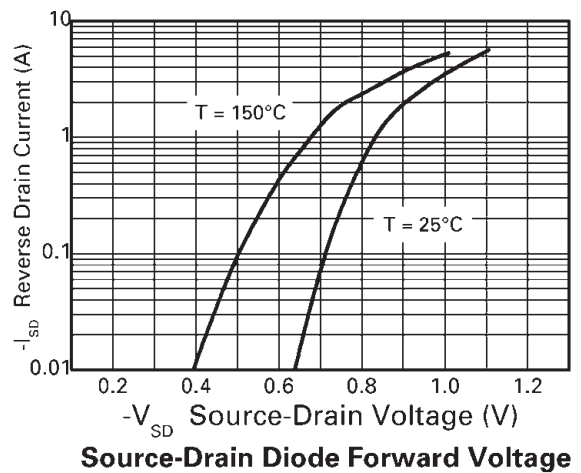
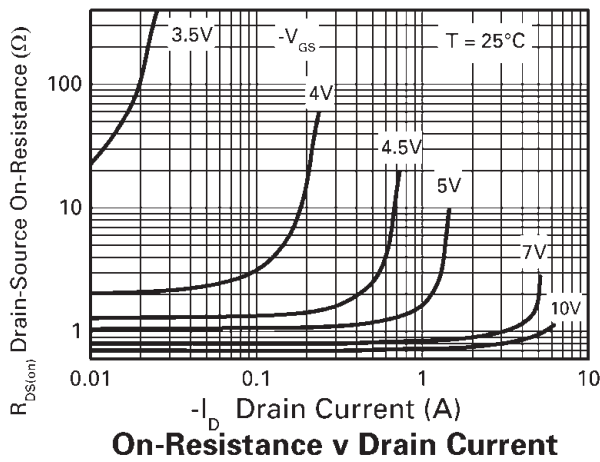
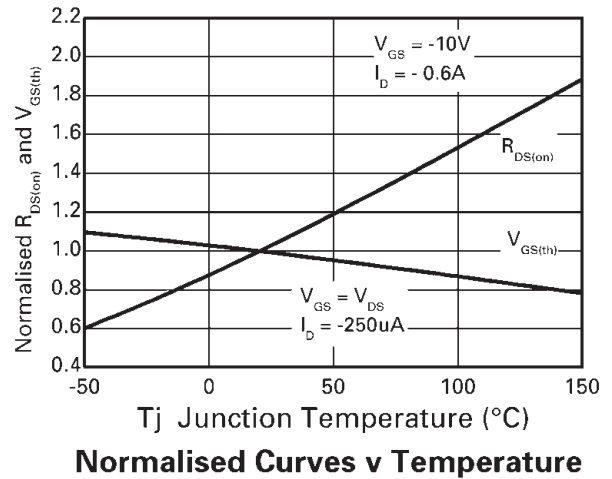
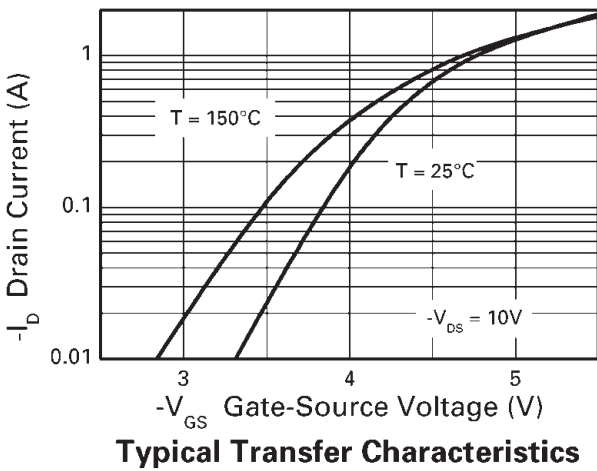
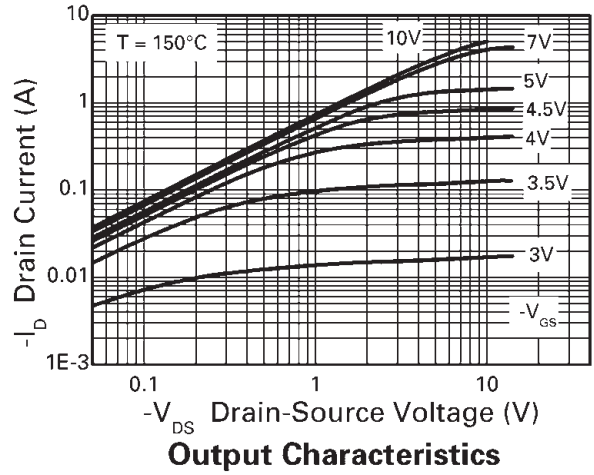
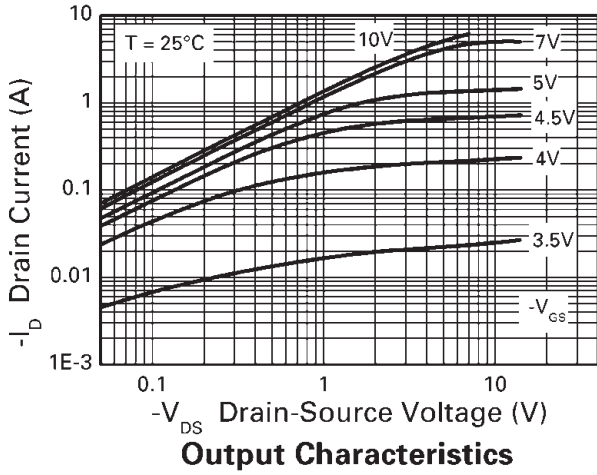
(3) Switching times measured with 50 Ω source impedance and <5ns rise time on a pulse generator

HIGH VOLTAGE MOSFET (P-CHANNEL)

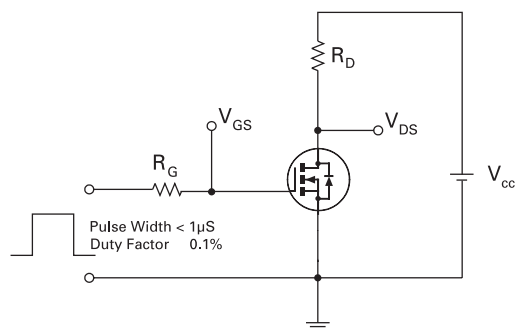
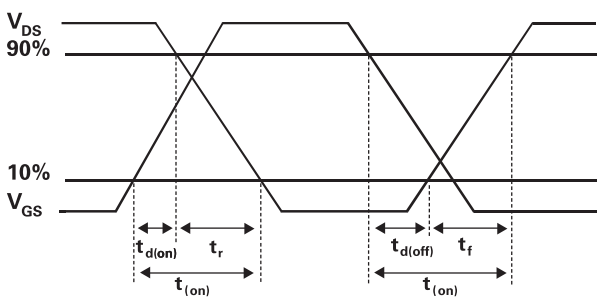
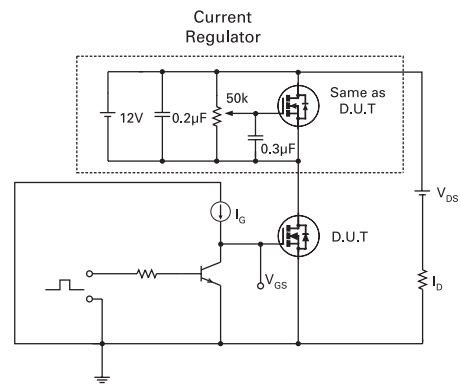
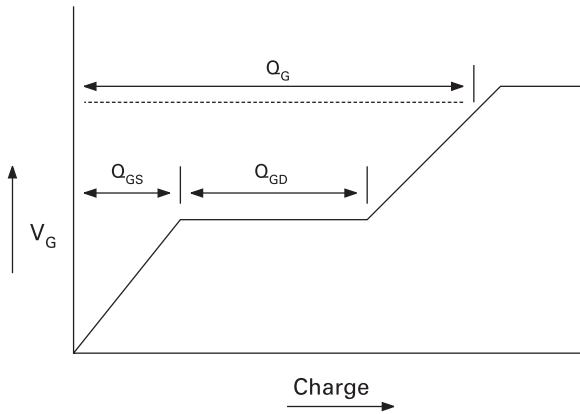
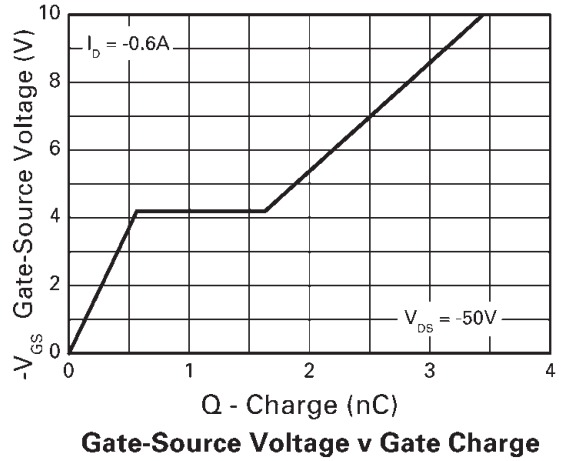
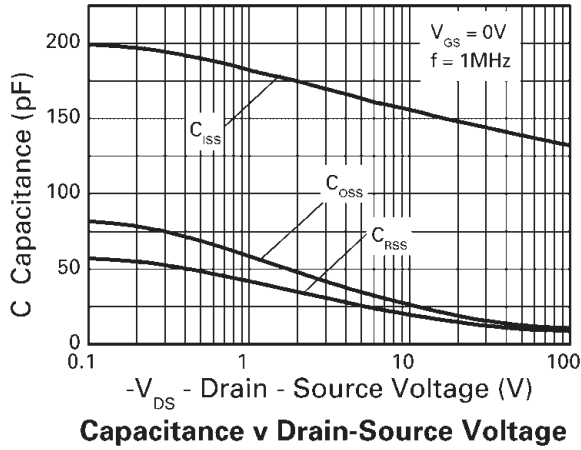
Typical Characteristics



HIGH VOLTAGE MOSFET (P-CHANNEL)

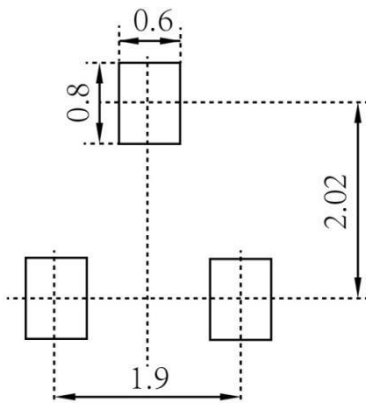


HIGH VOLTAGE MOSFET (P-CHANNEL)

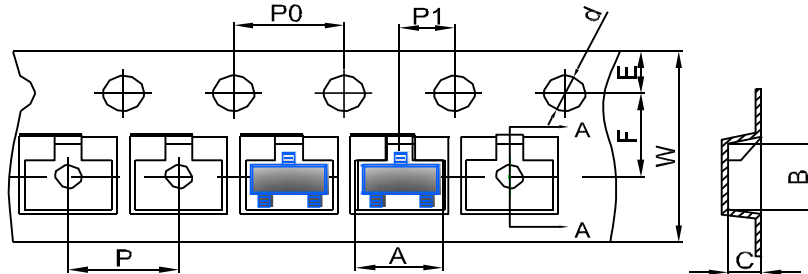


HIGH VOLTAGE MOSFET (P-CHANNEL)
SOT-23 Package Outline Dimensions

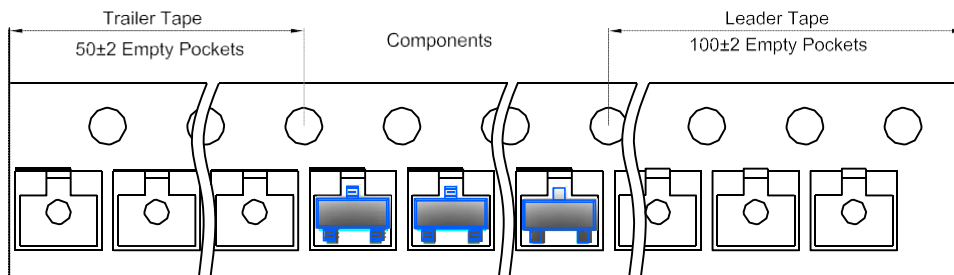
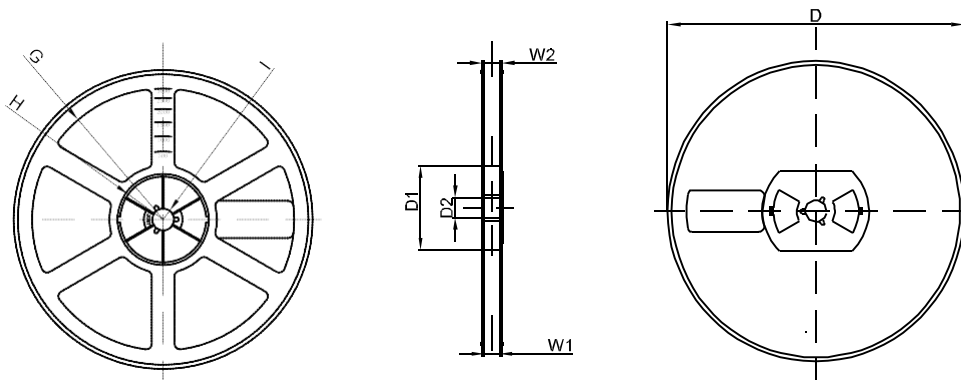

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP	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

SOT-23 Suggested Pad Layout

Note:

1. Controlling dimension: in millimeters
2. General tolerance: $\pm 0.05\text{mm}$
3. The pad layout is for reference purposes only

HIGH VOLTAGE MOSFET (P-CHANNEL)
SOT-23 Tape and Reel
SOT-23 Embossed Carrier Tape


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

SOT-23 Tape Leader and Trailer

SOT-23 Reel


DIMENSIONS ARE IN MILLIMETER								
REEL OPTION	D	D1	D2	G	H	I	W1	W2
7" DIA	Ø178	54.40	13.00	R78	R25.60	R6.50	9.50	12.30
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1