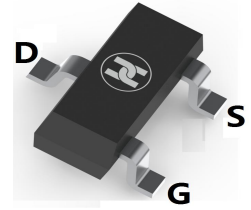
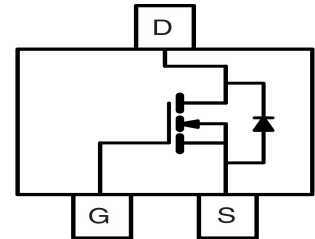


LOW VOLTAGE MOSFET (N-CHANNEL)
FEATURES

- Ultra low on-resistance: $V_{DS}=30V, R_{DS(ON)} \leq 32m\Omega @ V_{GS}=10V, I_D=4.3A$
- Load Switch
- DC/DC Converters


SOT-23

MECHANICAL DATA

- Case: SOT-23
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 0.008 grams (approximate)

Absolute Maximum Ratings (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V _{DSS}	30	V
Gate-Source Voltage	V _{GSS}	±20	V
Drain Current (Continuous) *AC	I _D	T _A =25°C	4.3
		T _A =70°C	3.5
Drain Current (Pulse) *B	I _{DM}	20	A
Power Dissipation	P _D	1.25	W
Operating Temperature/ Storage Temperature	T _J /T _{STG}	-55~150	°C

Electrical Characteristics @ T_J = 25°C (unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	30	--	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24V, V _{GS} = 0V	--	--	1	μA
Gate Threshold Voltage	V _{GS(TH)}	V _{GS} = V _{DS} , I _{DS} = 250μA	1	--	2.5	V
Gate Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V	--	--	±100	nA
Drain-Source On-state Resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 4A	--	32	42	mΩ
	R _{DS(on)}	V _{GS} = 4.5V, I _D = 3A	--	51	70	mΩ
Diode Forward Voltage	V _{SD}	I _{SD} = 1A, V _{GS} = 0V	--	--	1.2	V
Diode Forward Current	I _S	T _A = 25°C	--	--	1	A
Switching						
Total Gate Charge	Q _g	V _{GS} = 10V, V _{DS} = 15V, I _D = 6A	--	12.3	--	nC
Gate-Source Charge	Q _{gs}		--	1.5	--	nC
Gate-Drain Charge	Q _{gd}		--	2.5	--	nC
Turn-on Delay Time	t _{d(on)}	V _{DD} = 15V, R _G = 3Ω I _D = 4A, V _{GS} = 10V	--	9	--	ns
Turn-on Rise Time	t _r		--	3	--	ns
Turn-off Delay Time	t _{d(off)}		--	24	--	ns
Turn-Off Fall Time	t _f		--	4	--	ns
Dynamic						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 15V, f = 1.0MHz	--	610	--	pF
Output Capacitance	C _{oss}		--	145	--	pF
Reverse Transfer Capacitance	C _{rss}		--	95	--	pF

LOW VOLTAGE MOSFET (N-CHANNEL)

Typical Characteristics

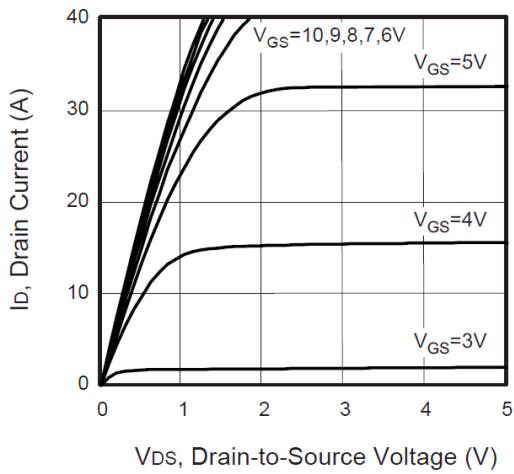


Figure 1. Output Characteristics

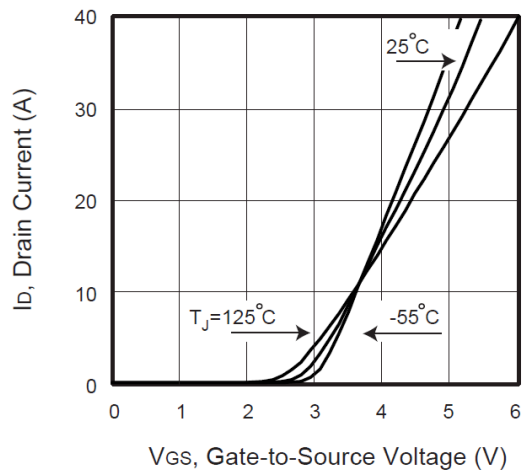


Figure 2. Transfer Characteristics

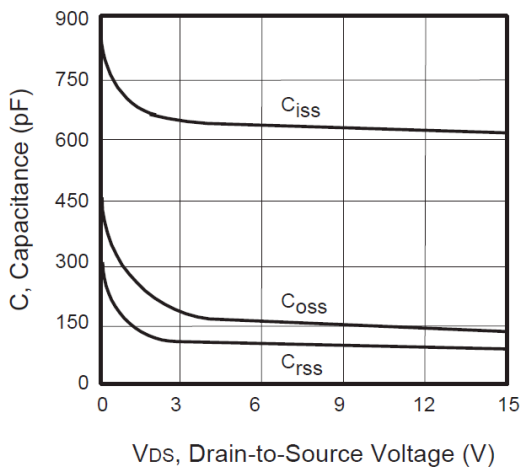


Figure 3. Capacitance

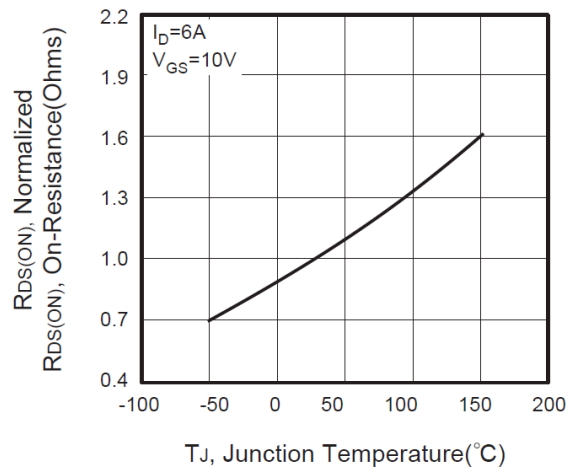


Figure 4. On-Resistance Variation with Temperature

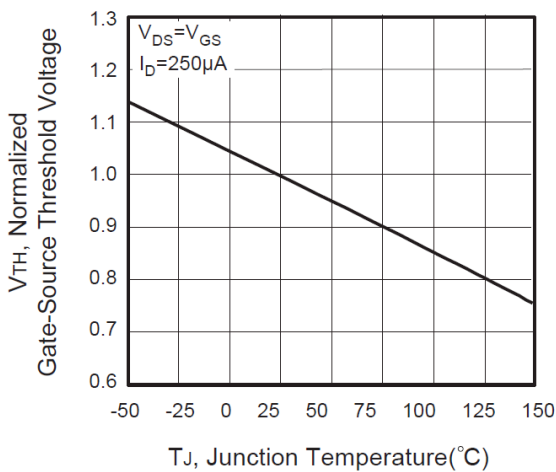


Figure 5. Gate Threshold Variation with Temperature

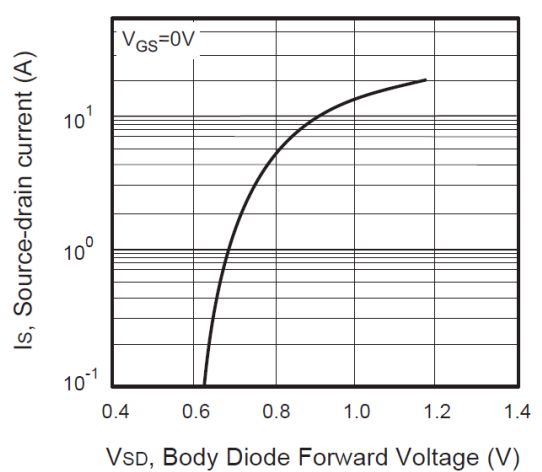


Figure 6. Body Diode Forward Voltage Variation with Source Current

LOW VOLTAGE MOSFET (N-CHANNEL)

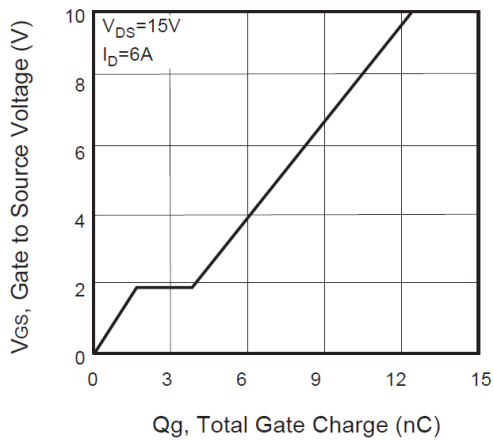


Figure 7. Gate Charge

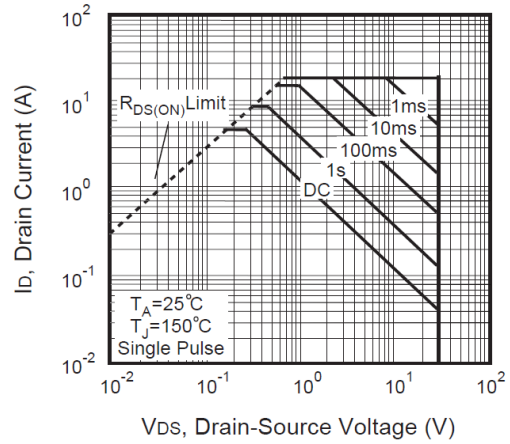


Figure 8. Maximum Safe Operating Area

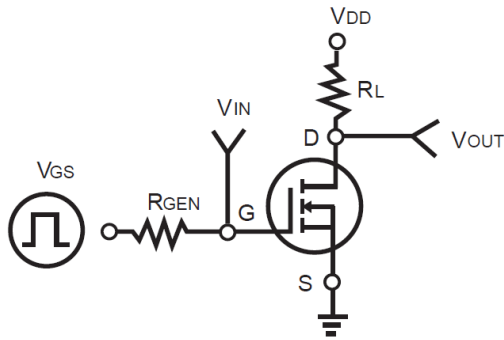


Figure 9. Switching Test Circuit

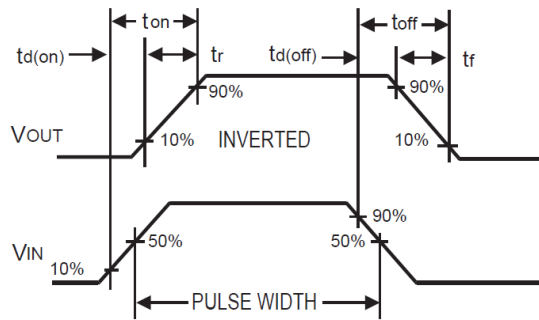


Figure 10. Switching Waveforms

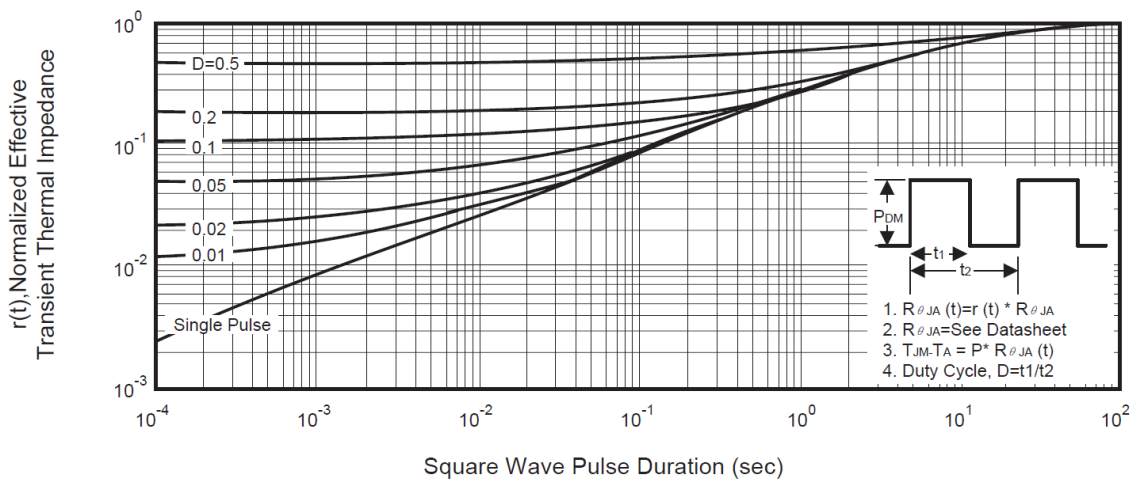
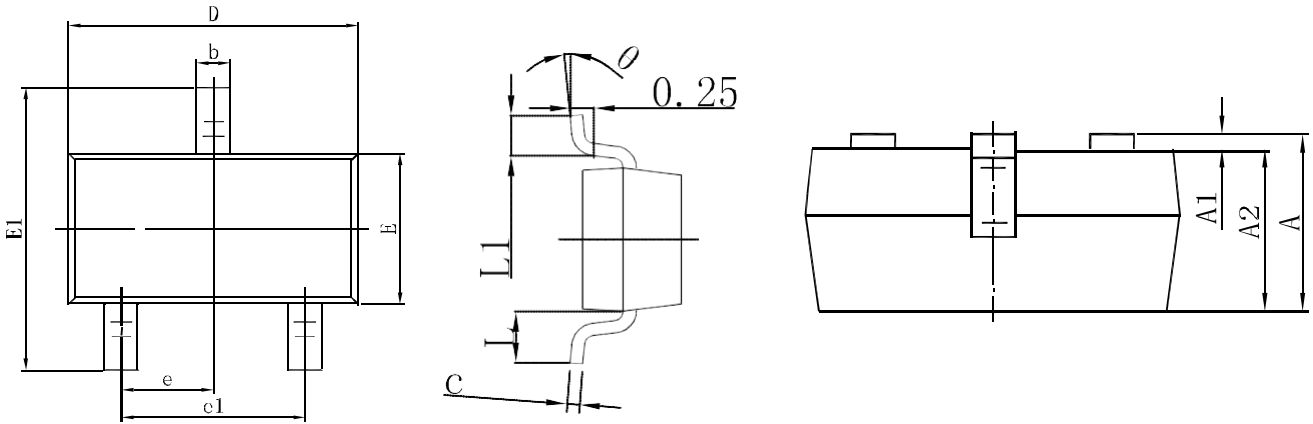
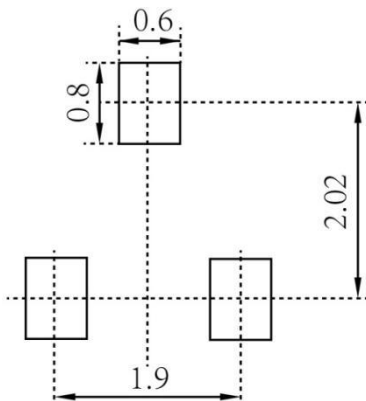


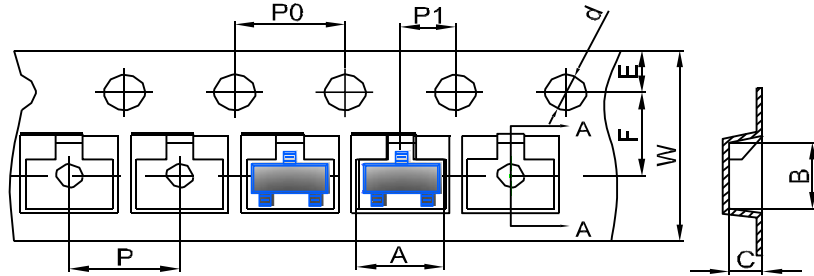
Figure 11. Normalized Thermal Transient Impedance Curve

LOW VOLTAGE MOSFET (N-CHANNEL)
SOT-23 Package Outline Dimensions


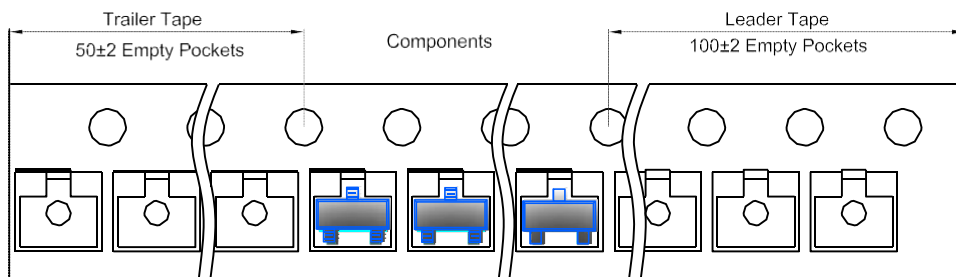
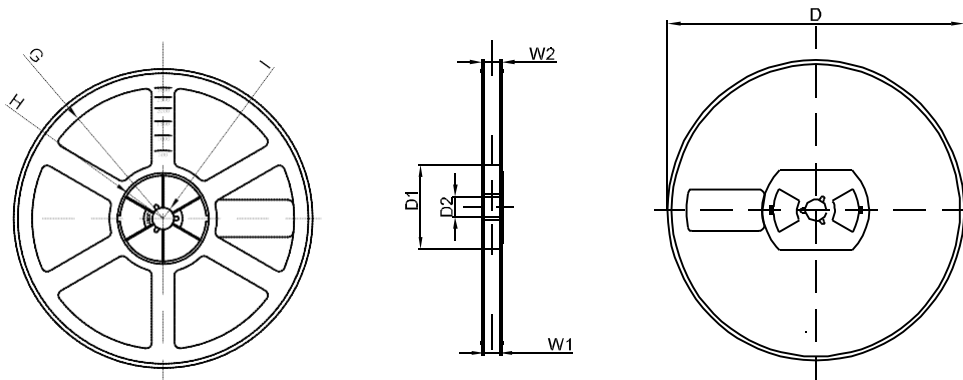
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		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

LOW VOLTAGE MOSFET (N-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