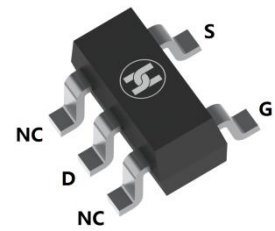
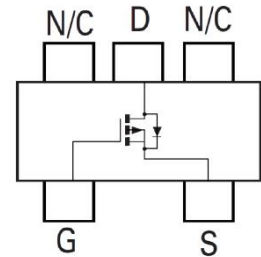


HIGH VOLTAGE MOSFET (P-CHANNEL)
FEATURES

- $V_{DS}=-200V, R_{DS(ON)} \leq 28\Omega @ V_{GS}=-10V, I_D=-122mA$
- High voltage and Low on-resistance
- Fast switching speed
- Low gate drive and Low threshold
- Surface Mount device


SOT-23-5

MECHANICAL DATA

- Case: SOT-23-5
- 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°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	-200	V
Gate-source voltage	V_{GS}	± 20	V
Continuous drain current ($V_{GS}=10V; T_{amb}=25^\circ C$)(a)	I_D	-122	mA
Pulsed drain current (c)	I_{DM}	-0.7	A
Pulsed Source Current (Body Diode)(c)	I_{SM}	-0.7	A
Power dissipation(a)	P_D	0.75	W
Junction to Ambient(a)	$R_{\theta JA}$	167	$^\circ C/W$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 ~ +150	$^\circ C$

NOTES (a) For a device surface mounted on 25mm x 25mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions

(b) For a device surface mounted on FR4 PCB measured at t5 secs.

(c) Repetitive rating - pulse width limited by maximum junction temperature. Refer to Transient Thermal Impedance graph.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
STATIC CHARACTERISTICS						
Drain-Source breakdown voltage	$V_{(BR)DSS}$	-200			V	$V_{GS}=0V, I_D=-1mA$
Gate-threshold voltage	$V_{GS(th)}$	-1.5		-3.5	V	$V_{DS}=V_{GS}, I_D=-1mA$
Gate-body leakage current	I_{GSS}			-20	nA	$V_{DS}=0V, V_{GS}=\pm 20V$
Zero gate voltage drain current	I_{DSS}			-10	μA	$V_{DS}=-200V, V_{GS}=0V$
				-100	μA	$V_{DS}=-160V, V_{GS}=0V, T_J=125^\circ C$
On-State Drain Current(1)	$I_{D(ON)}$	-300			mA	$V_{DS}=-25V, V_{GS}=-10V$
Drain-source on-resistance (1)	$R_{DS(ON)}$			28	Ω	$V_{GS}=-10V, I_D=-150mA$
Forward Trans-conductance (1) (2)	g_{fs}	50			mS	$V_{DS}=-25V, I_D=-150mA$
DYNAMIC CHARACTERISTICS						
Input capacitance(2)	C_{iss}			100	pF	$V_{DS}=-25V, V_{GS}=0V, f=1MHz$
Output capacitance(2)	C_{oss}			25	pF	
Reverse transfer capacitance(2)	C_{rss}			7	pF	
SWITCHING CHARACTERISTICS						
Turn-on delay time(2)(3)	$t_{d(on)}$			7	nS	$V_{DD}=-25V, I_D=-150mA$
Turn-on rise time(2)(3)	t_r			15	nS	
Turn-off delay time(2)(3)	$t_{d(off)}$			12	nS	
Turn-off fall time(2)(3)	t_f			15	nS	

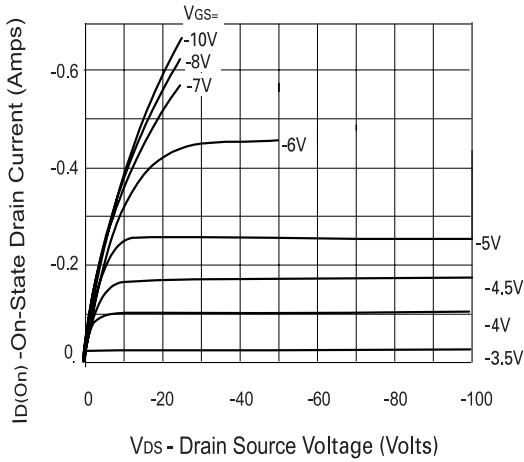
Note:(1) Measured under pulsed conditions. Width=300 μs . Duty cycle $\leq 2\%$.

(2) Sample test.

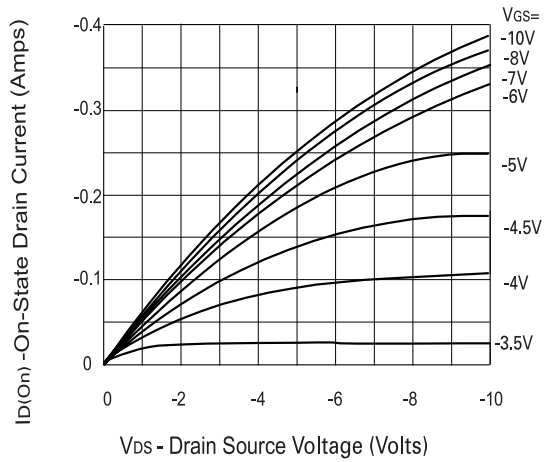
(3) Switching times measured with 50 Ω source impedance and <5ns rise time on a pulse generator

HIGH VOLTAGE MOSFET (P-CHANNEL)

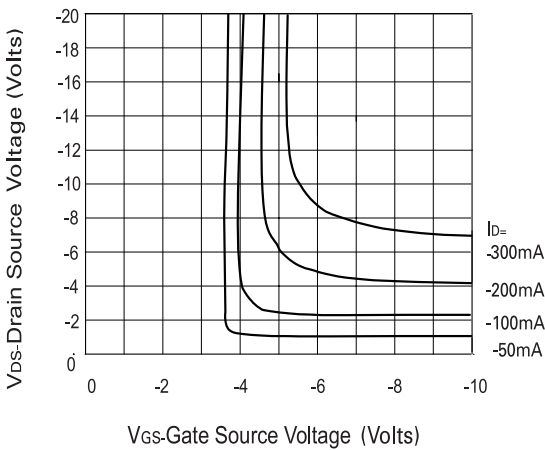
Typical Characteristics



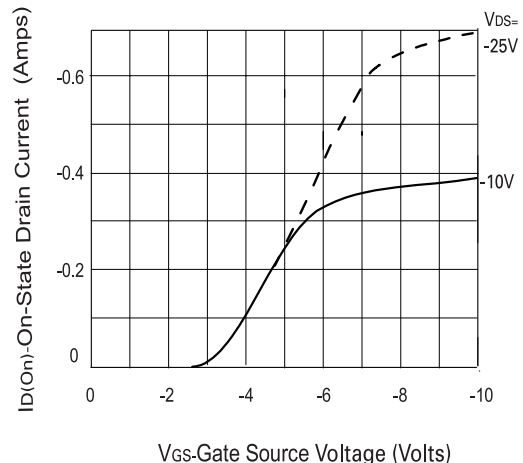
Output Characteristics



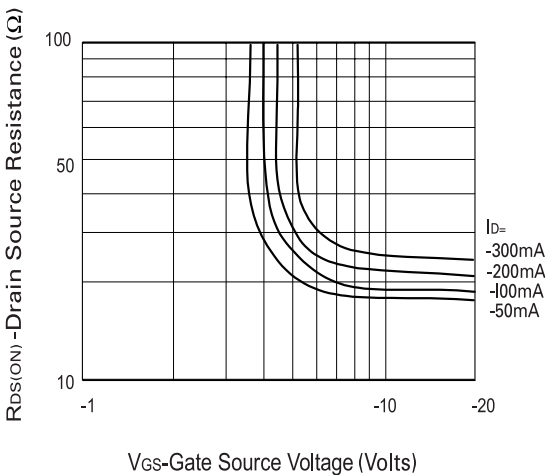
Saturation Characteristics



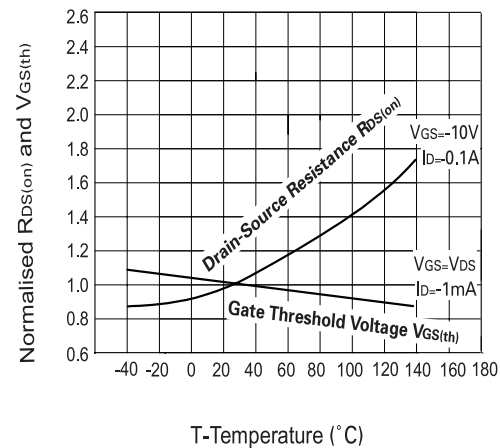
Voltage Saturation Characteristics



Transfer Characteristics

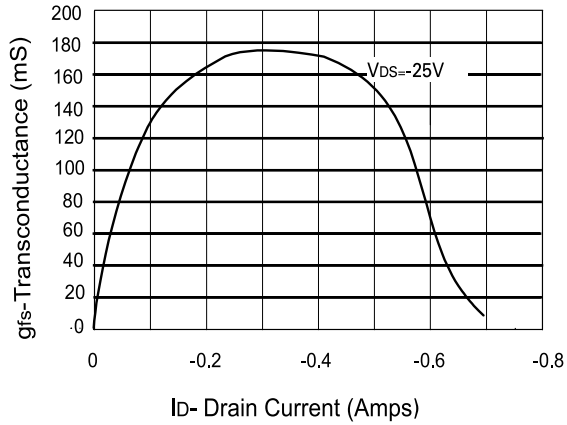


On-resistance vs gate-source voltage

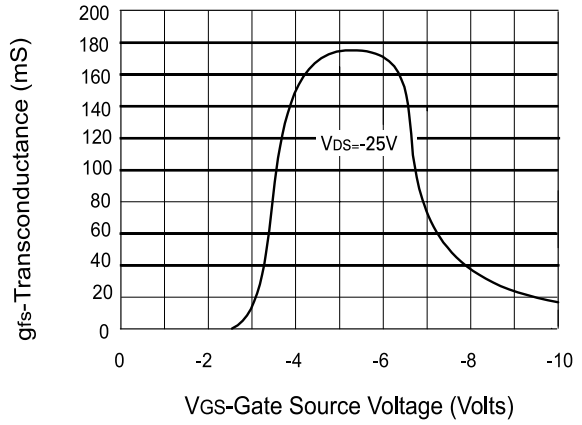


Normalised $R_{DS(on)}$ and $V_{GS(th)}$ vs Temperature

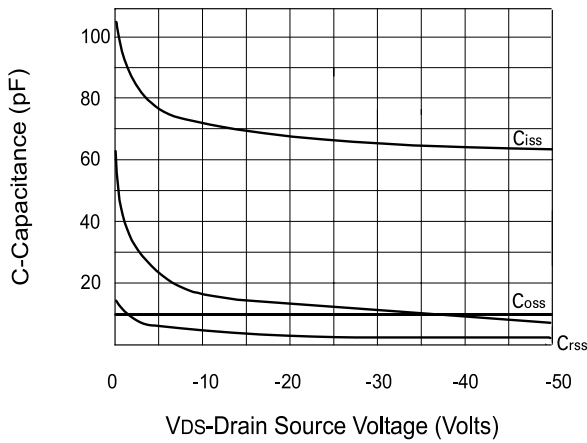
HIGH VOLTAGE MOSFET (P-CHANNEL)



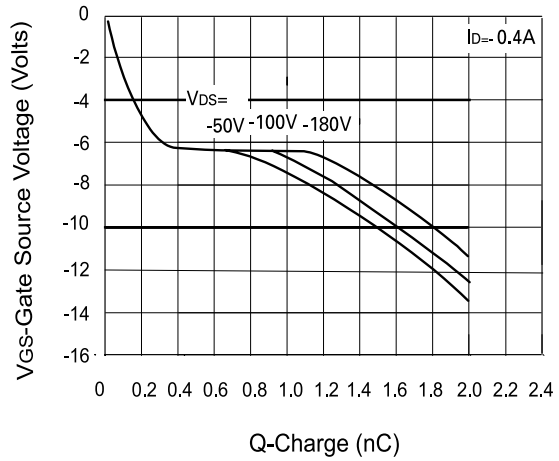
Transconductance v drain current



Transconductance v gate-source voltage



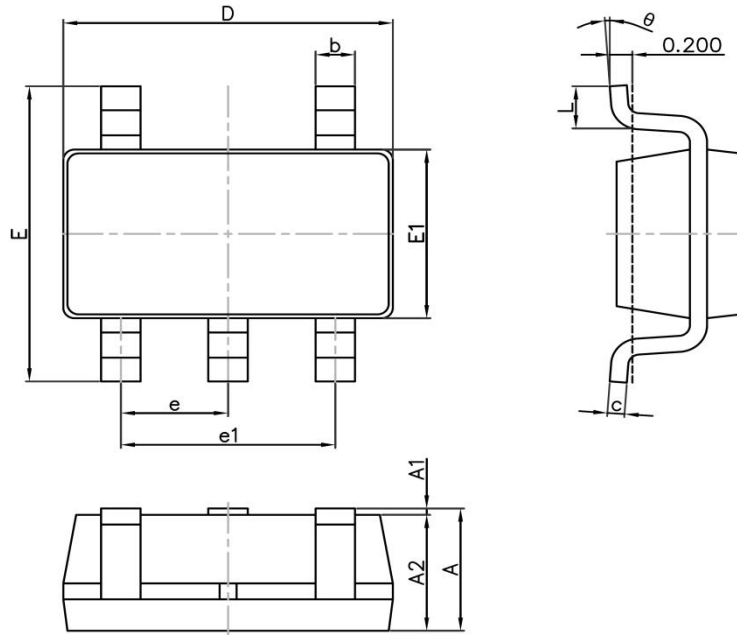
Capacitance v drain-source voltage



Gate charge v gate-source voltage

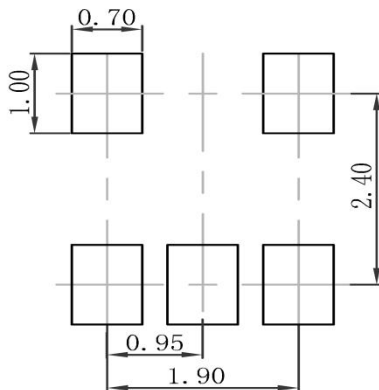
HIGH VOLTAGE MOSFET (P-CHANNEL)

SOT-23-5 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

SOT-23-5 Suggested Pad Layout



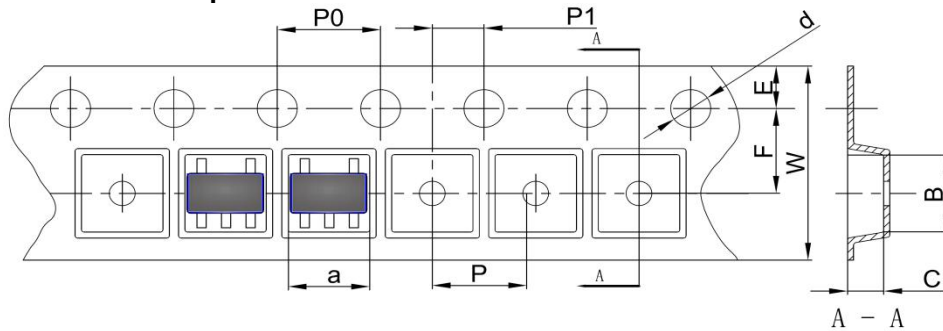
Note:

1. Controlling dimension: in millimeters
2. General tolerance: ±0.05mm
3. The pad layout is for reference purposes only

HIGH VOLTAGE MOSFET (P-CHANNEL)

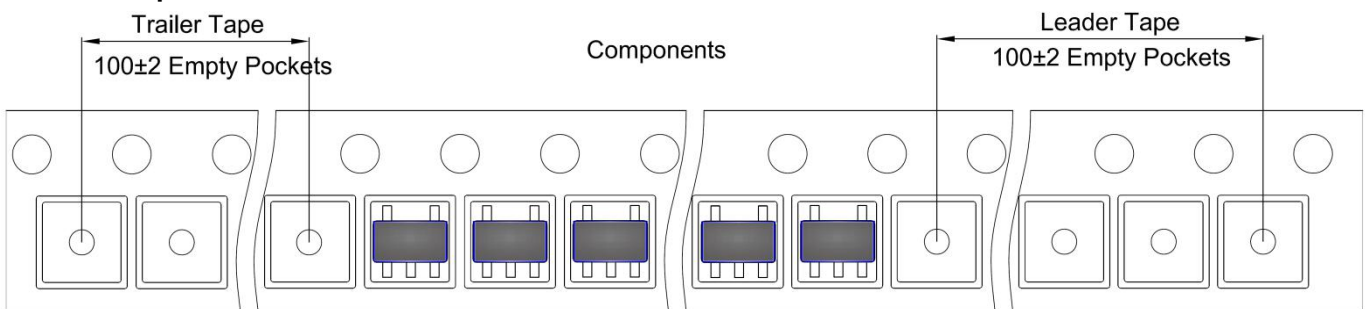
SOT-23-5 Tape and Reel

SOT-23-5 Embossed Carrier Tape

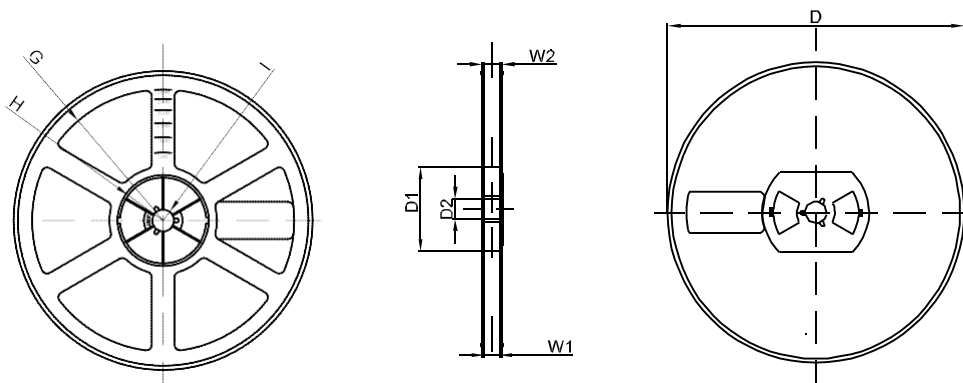


DIMENSIONS ARE IN MILLIMETER										
TYPE	a	B	C	d	E	F	P0	P	P1	W
SOT-23-5	3.17	3.23	1.37	Ø1.55	1.75	3.50	4.00	4.00	2.00	8.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

SOT-23-5 Tape Leader and Trailer



SOT-23-5 Reel



DIMENSIONS ARE IN MILLIMETER								
REEL OPTION	D	D1	D2	G	H	I	W1	W2
7" DIA	Ø180	60.00	13.00	R78	R25.60	R6.50	9.50	13.10
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1