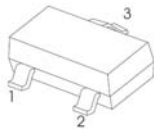
2307

P-Channel 30-V(D-S) MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$MAX	I_D
-30V	88mΩ@-10V	-2.7A
	138mΩ@-4.5V	

SOT-23



1. GATE
2. SOURCE
3. DRAIN

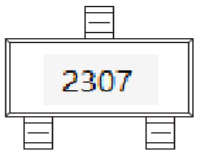
FEATURE

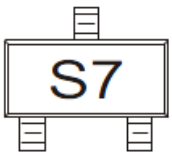
- TrenchFET Power MOSFET

APPLICATION

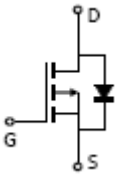
- Load Switch for Portable Devices

MARKING





Equivalent Circuit



Maximum ratings (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±20	
Continuous Drain Current [a,b]	I_D	-2.7	A
Continuous Source-Drain Current[a,b]	I_S	-0.91	
Power Dissipation[a,b]	P_D	1.1	W
Thermal Resistance from Junction to Ambient (t≤5s)	$R_{\theta JA}$	114	℃/W
Operation Junction and Storage Temperature Range	T_J,T_{stg}	-55 ~+150	℃

T_a=25℃ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-30			V
Gate-Source Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-1		-3	
Gate-Source Leakage	I_{GSS}	V_{DS} =0V, V_{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =-30V, V_{GS} =0V			-1	μA
		V_{DS} =-30V, V_{GS} =0V, T_J=55℃			-10	
Drain-Source On-State Resistance[c]	$R_{DS(on)}$	V_{GS} =-4.5V, I_D =-2.5A		0.110	0.138	Ω
		V_{GS} =-10V, I_D =-3.5A		0.073	0.088	
Forward Transconductance[c]	g_{fs}	V_{DS} =-10V, I_D =-3.5A		7		S
Dynamic[d]						
Input Capacitance	C_{iss}	V_{DS} =-15V,V_{GS} =0V,f =1MHz		340		pF
Output Capacitance	C_{oss}			67		
Reverse Transfer Capacitance	C_{rss}			51		
Total Gate Charge	Q_g	V_{DS} =-15V,V_{GS} =-4.5V, I_D =-2.5A		4.1	6.2	nC
Gate-Source Charge	Q_{gs}			1.3		
Gate-Drain Charge	Q_{gd}			1.8		
Gate Resistance	R_g	f =1MHz		10		Ω
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=-15V, R_L=15Ω, I_D =-1A, V_{GEN}=-4.5V,Rg=1Ω		40	60	ns
Rise Time	t_r			40	60	
Turn-Off Delay Time	$t_{d(off)}$			20	40	
Fall Time	t_f			17	30	
Drain-source Body diode characteristics						
Body Diode Voltage	V_{SD}	I_S=-0.75A, ,V_{GS} =0		-0.8	-1.2	V

Notes:

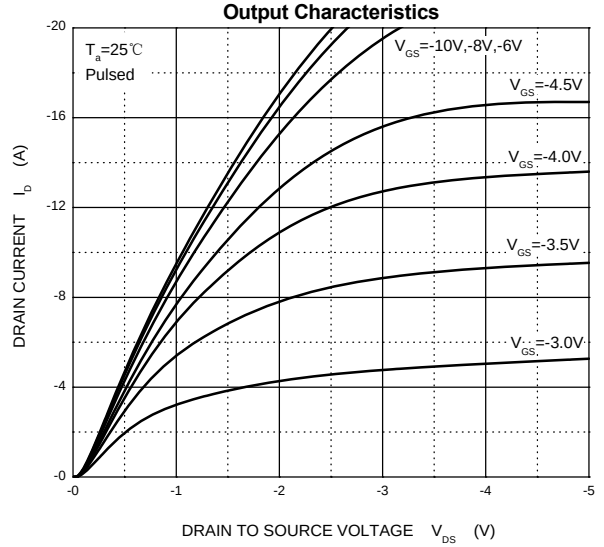
a. t=5s.

b. Surface mounted on 1” ×1” FR4 board.

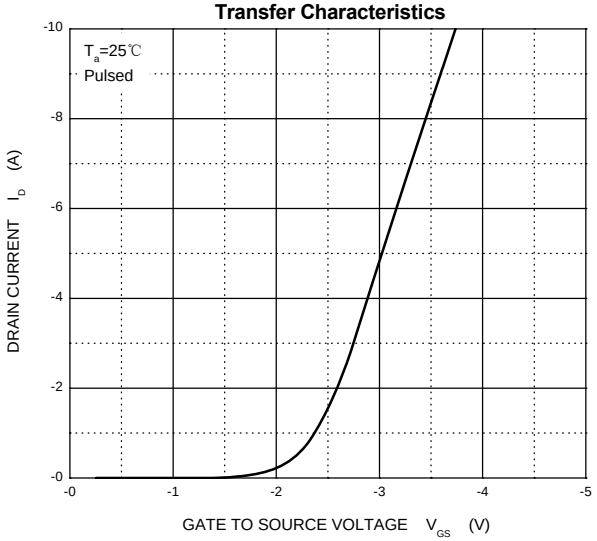
c. Pulse Test : Pulse Width < 300μs, Duty Cycle ≤2%.

d. Guaranteed by design, not subject to production testing.

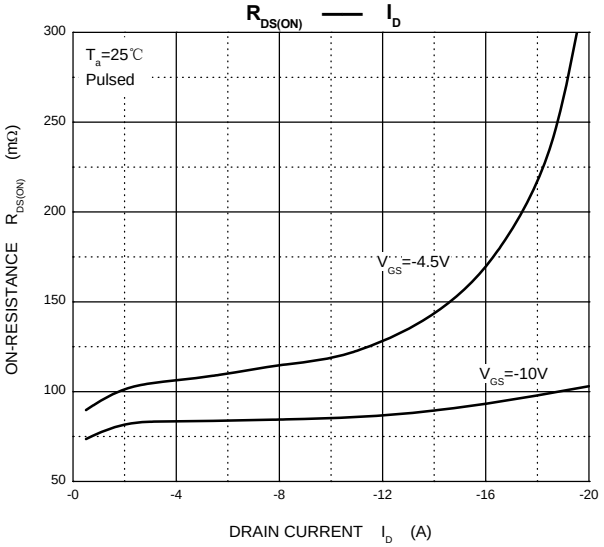
Output Characteristics



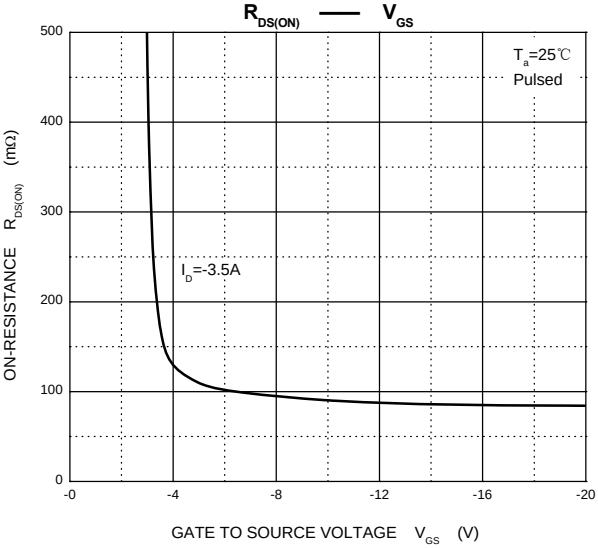
Transfer Characteristics



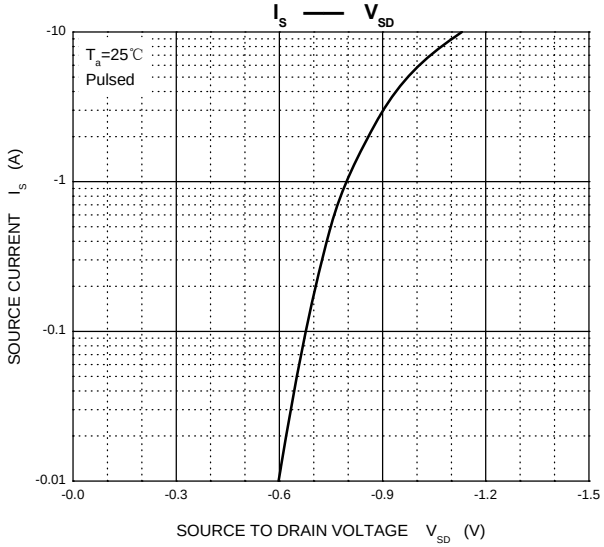
$R_{DS(ON)}$ — I_D

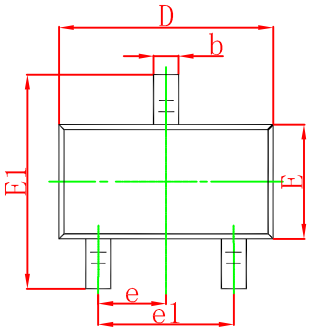


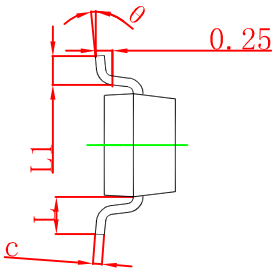
$R_{DS(ON)}$ — V_{GS}

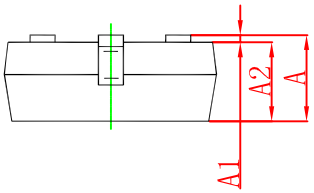


I_S — V_{SD}



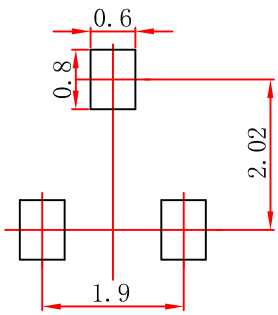






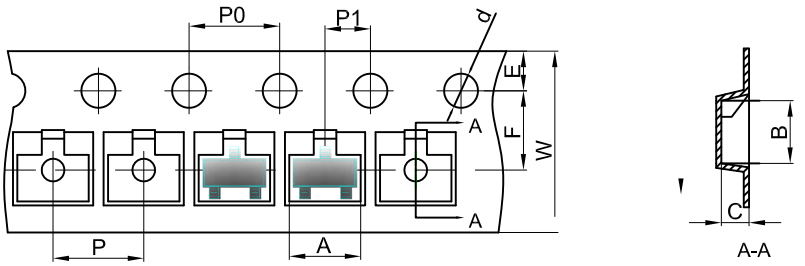
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 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



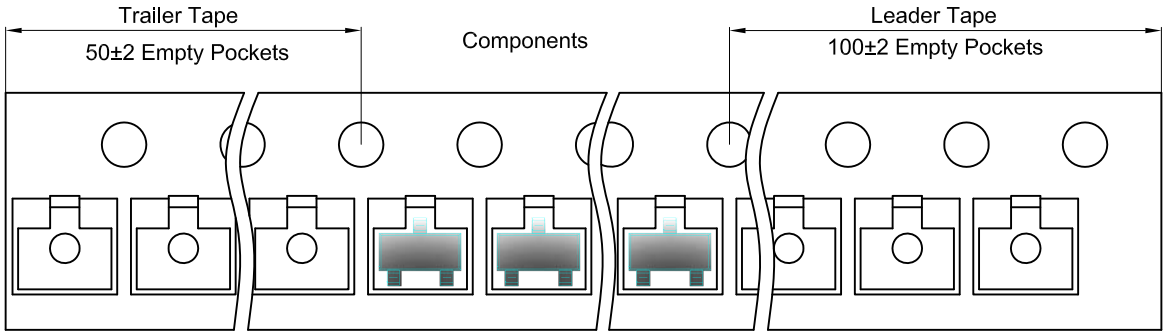
Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

SOT-23 Embossed Carrier Tape

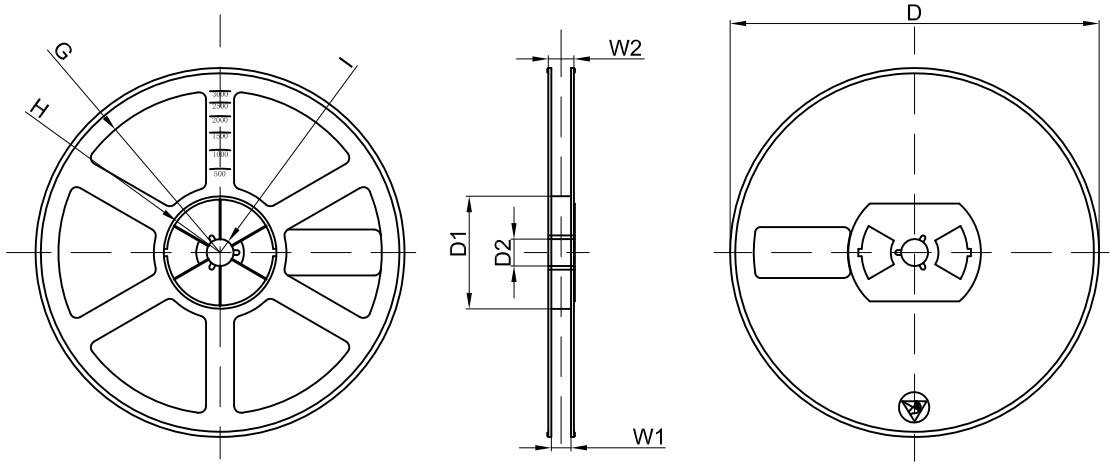


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

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	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	
3000 pcs	7 inch	3000 pcs	