

Features

- Surface Mount Package
- P-Channel Switch with Low $R_{DS(on)}$
- Operated at Low Logic Level Gate Drive

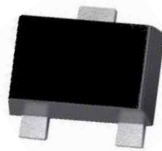
Applications

- Load/Power Switching
- Interfacing, Logic Switching
- Battery Management for Ultra Small Portable Electronics

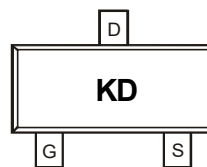
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)m\Omega}$	I_D
-20V	400m Ω @-4.5V	-1.3A
	550m Ω @-2.5V	
	700m Ω @-1.8V	

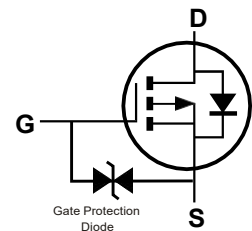
Schematic & PIN Configuration



Top View
SOT-723



Top View
Pin Configuration



Equivalent Circuit

ABSOLUTE MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current ⁽¹⁾	I_D	-1.3	A
Pulsed Drain Current ($t_p=10\mu s$)	I_{DM}	-2.8	A
Power Dissipation ⁽¹⁾	P_D	150	mW
Thermal Resistance from Junction to Ambient ⁽¹⁾	$R_{\theta JA}$	833	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}C$
Lead Temperature for Soldering Purposes(1/8" from case for 10s)	T_L	260	$^{\circ}C$



MOSFET ELECTRICAL CHARACTERISTICS (Ta=25 °C unless otherwise noted)

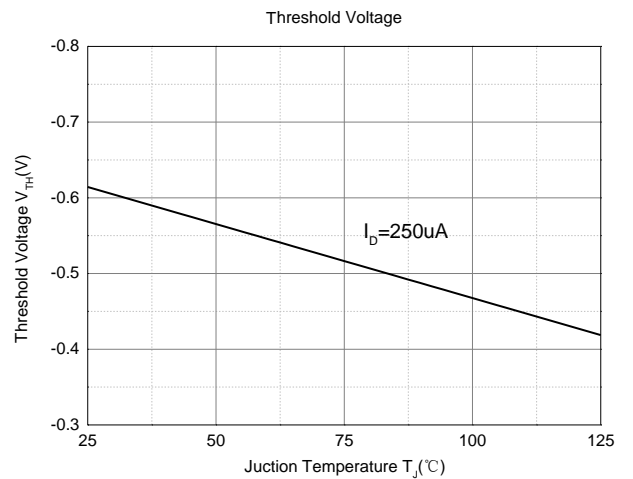
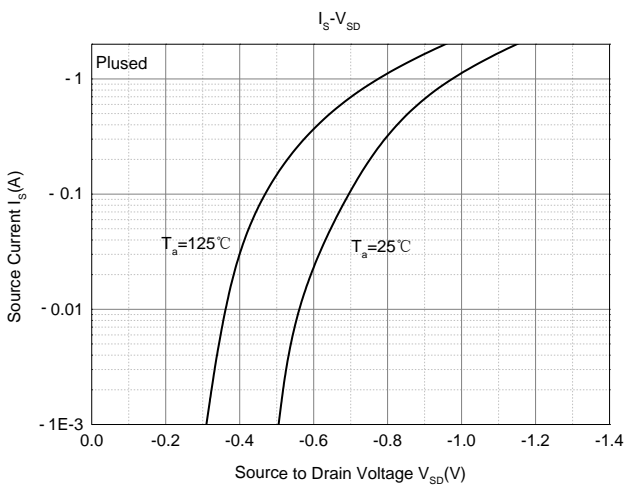
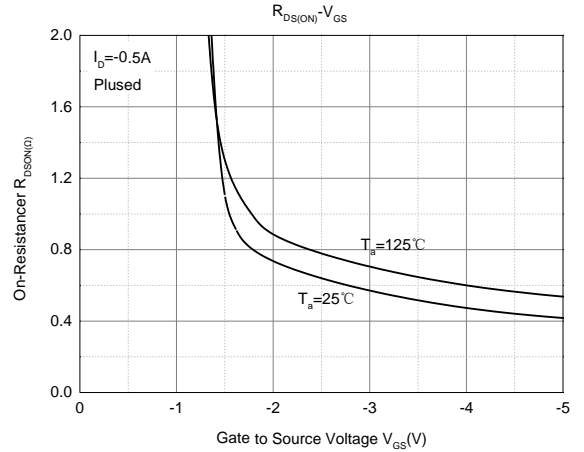
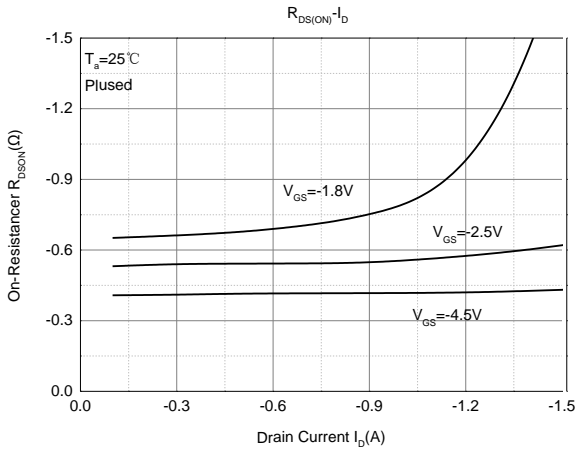
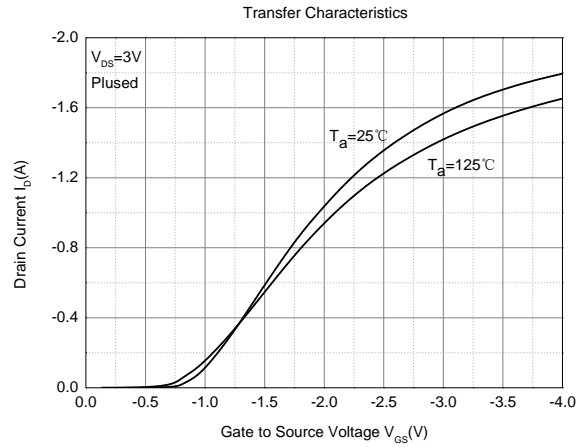
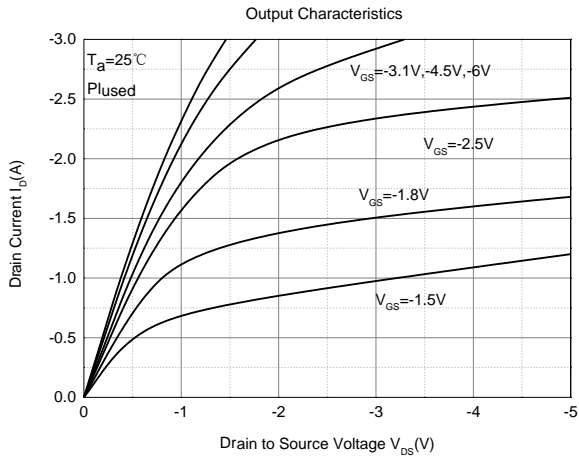
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-20			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = -16V, V_{GS} = 0V$			-1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 12V, V_{DS} = 0V$			± 10	μA
Gate threshold voltage ⁽²⁾	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.4	-0.7	-1	V
Drain-source on-resistance ⁽²⁾	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -0.5A$		400	450	m Ω
		$V_{GS} = -2.5V, I_D = -0.5A$		550	650	
		$V_{GS} = -1.8V, I_D = -0.1A$		700	900	
Forward transconductance ⁽²⁾	g_{FS}	$V_{DS} = -10V, I_D = -0.54A$		1.2		S
Dynamic characteristics⁽⁴⁾						
Input Capacitance	C_{iss}	$V_{DS} = -16V, V_{GS} = 0V, f = 1MHz$		113		pF
Output Capacitance	C_{oss}			15		
Reverse Transfer Capacitance	C_{rss}			9		
Switching Characteristics⁽⁴⁾						
Turn-on delay time ⁽³⁾	$t_{d(on)}$	$V_{DS} = -10V, I_D = -200mA,$ $V_{GS} = -4.5V, R_G = 10\Omega$		9		ns
Turn-on rise time ⁽³⁾	t_r			5.7		
Turn-off delay time ⁽³⁾	$t_{d(off)}$			32.6		
Turn-off fall time ⁽³⁾	t_f			20.3		
Source-Drain Diode characteristics						
Diode forward voltage	V_{DS}	$I_S = -0.5A, V_{GS} = 0V$			-1.1	V

Notes:

1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse Test : Pulse Width=300 μs , Duty Cycle=2%.
3. Switching characteristics are independent of operating junction temperatures.
4. Guaranteed by design, not subject to producing.

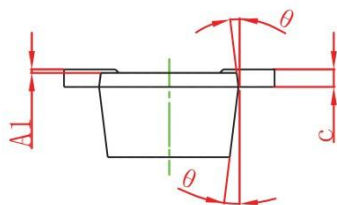
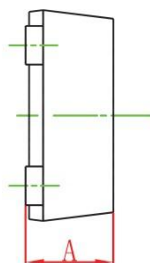
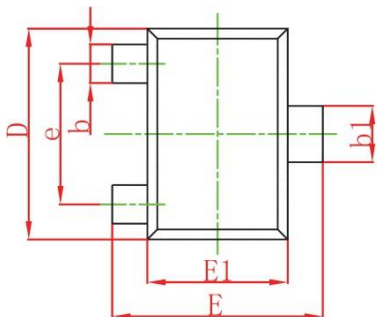


Typical Electrical and Thermal Characteristics



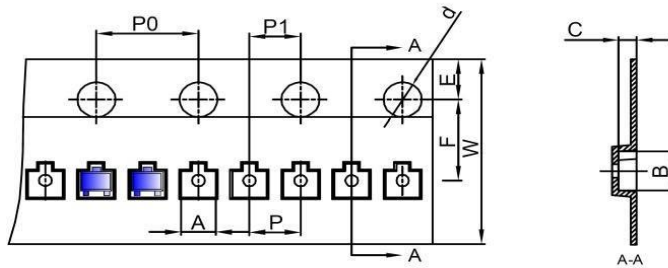


SOT-723 Package Information



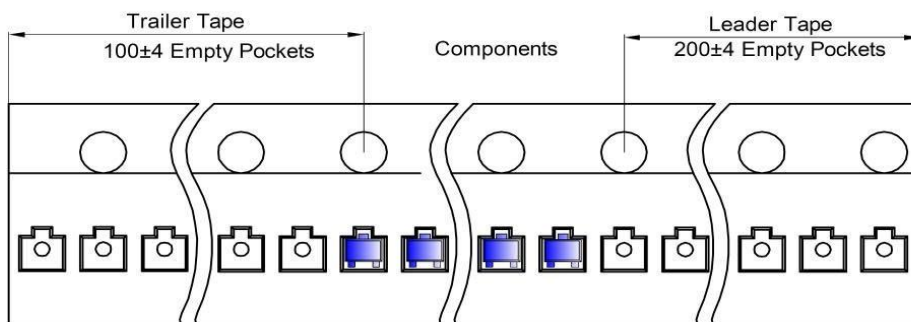
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.430	0.500	0.017	0.020
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
c	0.080	0.150	0.003	0.006
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
E1	0.750	0.850	0.030	0.033
e	0.800TYP.		0.031TYP.	
θ	7° REF.		7° REF.	

SOT-723 Tape and reel

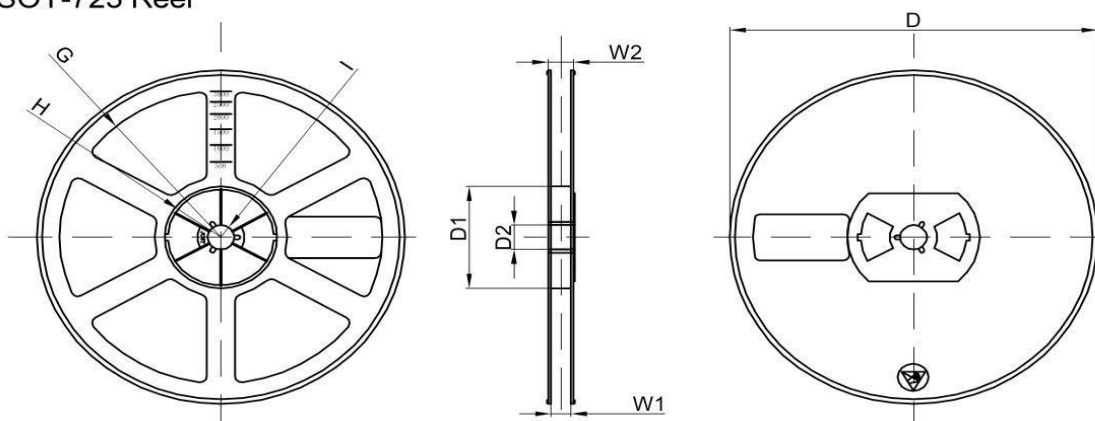


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-723	1.33	1.45	0.61	Ø1.50	1.75	3.50	4.00	2.00	2.00	8.00

SOT-723 Tape Leader and Trailer



SOT-723 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	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
8000 pcs	7 inch	80,000 pcs	203×203×195	320,000 pcs	438×438×220	