



#### Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
20V	190mΩ@4.5V	0.75A
	260mΩ@2.5V	
	390mΩ@1.8V	

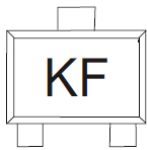
#### Feature

- Lead Free Product is Acquired
- Surface Mount Package
- N-Channel Switch with Low  $R_{DS(on)}$
- Operated at Low Logic Level Gate Drive

#### Application

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

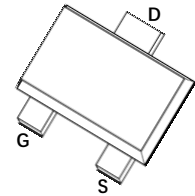
#### MARKING:



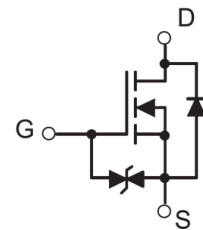
#### ABSOLUTE MAXIMUM RATINGS ( $T_a=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	20	V
Gate-Source Voltage	$V_{GS}$	±12	V
Continuous Drain Current <sup>(1)</sup>	$I_D$	0.75	A
Pulsed Drain Current( $t_p=10\mu s$ )	$I_{DM}$	1.8	A
Power Dissipation <sup>(1)</sup>	$P_D$	150	mW
Thermal Resistance from Junction to Ambient <sup>(1)</sup>	$R_{\theta JA}$	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	$^{\circ}C$

SOT-723



Schematic diagram



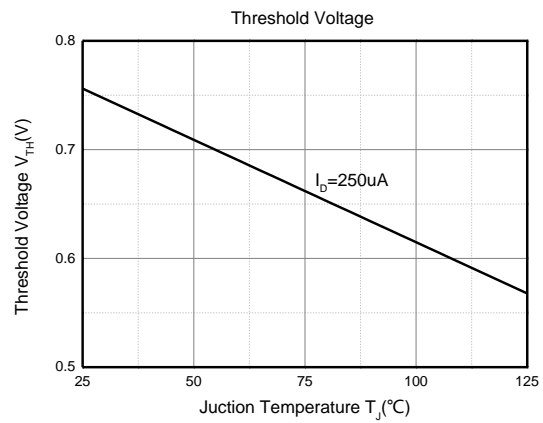
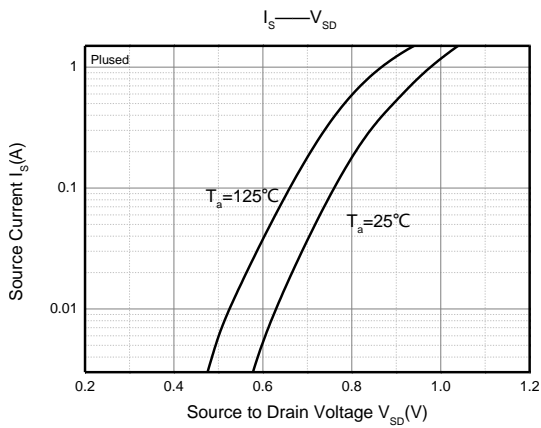
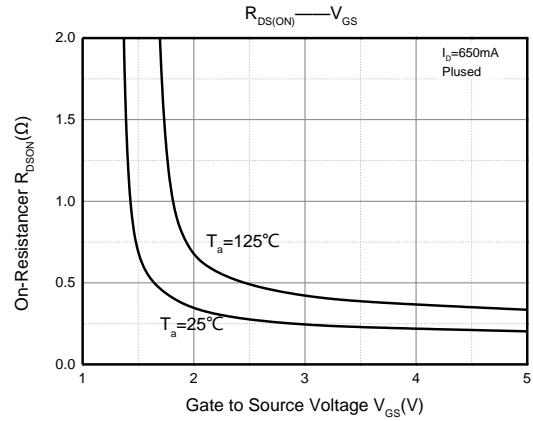
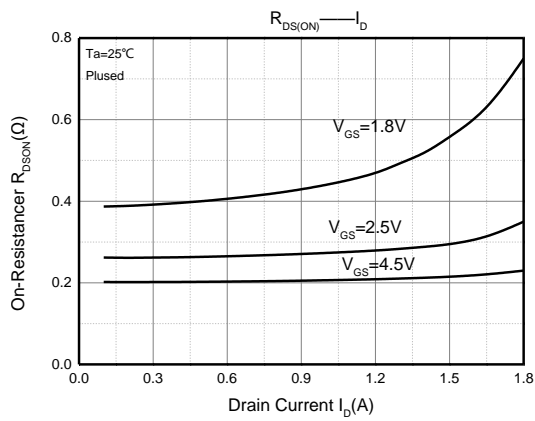
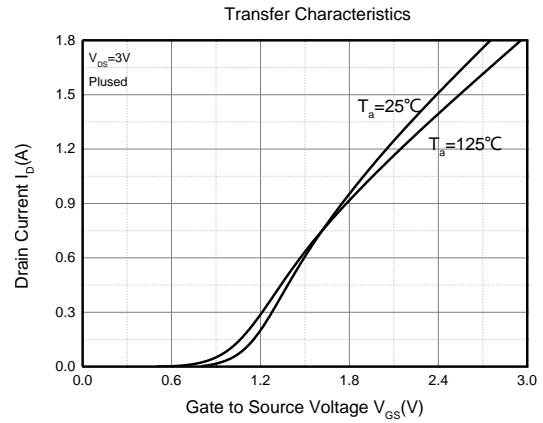
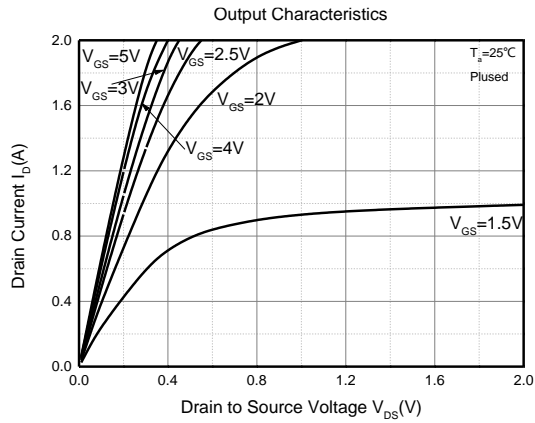
## MOSFET ELECTRICAL CHARACTERISTICS( $T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Static Characteristics</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 20V, V_{GS} = 0V$			1	$\mu A$
Gate-body leakage current	$I_{GSS}$	$V_{GS} = \pm 10V, V_{DS} = 0V$			$\pm 20$	$\mu A$
Gate threshold voltage <sup>(2)</sup>	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.35	0.75	1.1	V
Drain-source on-resistance <sup>(2)</sup>	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 650mA$		190	260	m $\Omega$
		$V_{GS} = 2.5V, I_D = 550mA$		260	360	
		$V_{GS} = 1.8V, I_D = 450mA$		390	590	
Forward tranconductance	$g_{FS}$	$V_{DS} = 10V, I_D = 800mA$		1.6		S
<b>Dynamic characteristics<sup>(4)</sup></b>						
Input Capacitance	$C_{iss}$	$V_{DS} = 16V, V_{GS} = 0V, f = 1MHz$		79	120	pF
Output Capacitance	$C_{oss}$			13	20	
Reverse Transfer Capacitance	$C_{rss}$			9	15	
<b>Switching Characteristics<sup>(4)</sup></b>						
Turn-on delay time <sup>(3)</sup>	$t_{d(on)}$	$V_{DS} = 10V, I_D = 500mA,$ $V_{GS} = 4.5V, R_G = 10\Omega$		6.7		ns
Turn-on rise time <sup>(3)</sup>	$t_r$			4.8		ns
Turn-off delay time <sup>(3)</sup>	$t_{d(off)}$			17.3		ns
Turn-off fall time <sup>(3)</sup>	$t_f$			7.4		ns
<b>Source-Drain Diode characteristics</b>						
Diode Forward voltage <sup>(3)</sup>	$V_{DS}$	$I_S = 0.15A, V_{GS} = 0V$			1.2	V

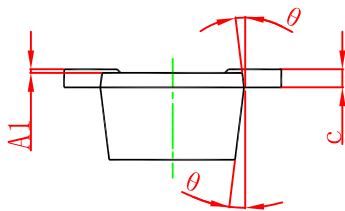
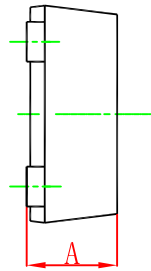
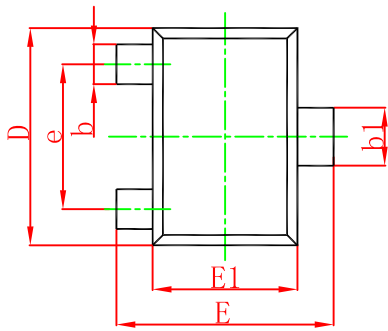
### Notes:

1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse Test : Pulse Width=300 $\mu s$ , 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

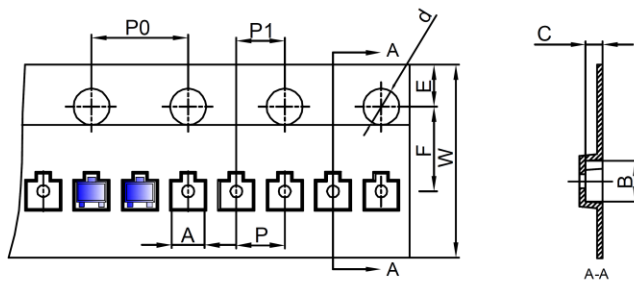


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.320	0.400	0.013	0.016
A1	0.000	0.050	0.000	0.002
b	0.175	0.250	0.007	0.010
b1	0.225	0.300	0.009	0.012
c	0.090	0.130	0.004	0.005
D	1.170	1.230	0.046	0.048
E	1.150	1.250	0.045	0.049
E1	0.770	0.830	0.030	0.033
e	0.800TYP.		0.031TYP.	
$\theta$	7° REF.		7° REF.	

## SOT-723 Tape and Reel

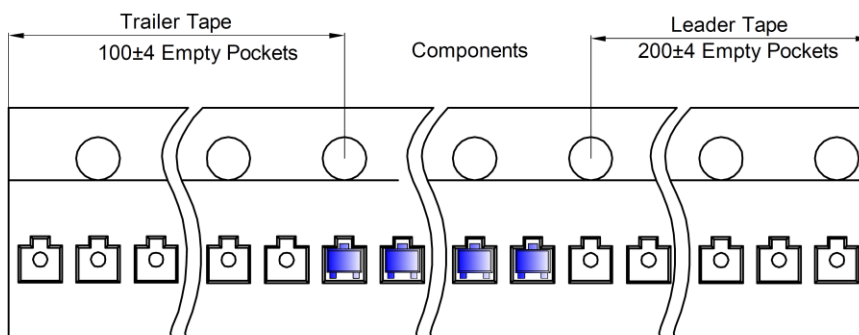
### SOT-723 Tape and reel

SOT-723 Embossed Carrier Tape

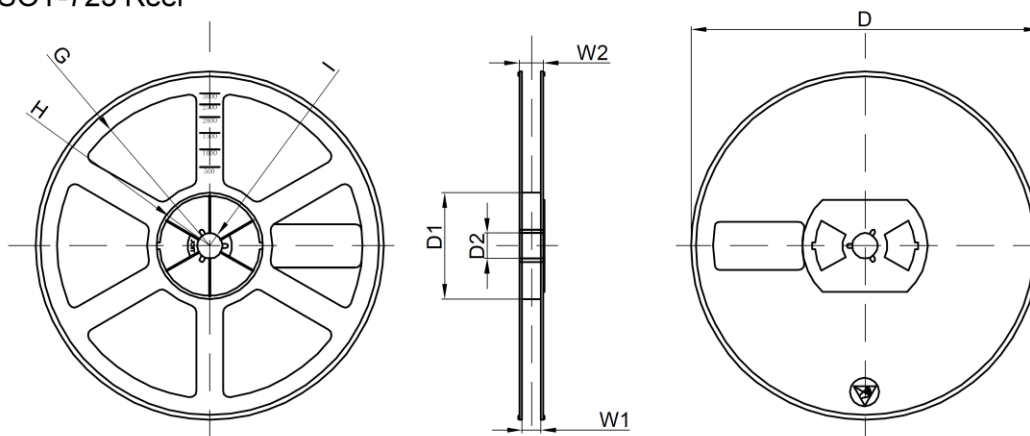


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-723	1.33	1.45	0.61	Ø1.50	1.75	3.50	4.00	2.00	2.00	8.00

### 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	