

### Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	$I_D$
-20V	750mΩ@-4.5V	-0.66A
	1000mΩ@-2.5V	

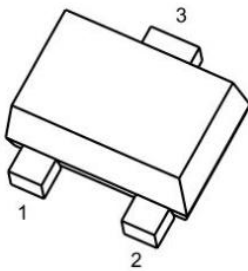
### Feature

- P-Channel Switch with Low RDS(on)
- Operated at Low Logic Level Gate Drive
- Surface Mount Package
- ESD protected

### Application

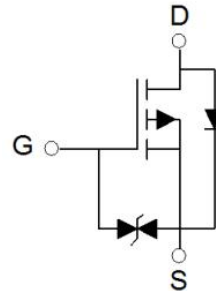
- Load/Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics

### Package

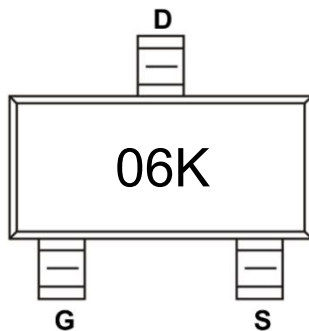


SOT-723

### Circuit diagram



### Marking



### Absolute maximum ratings (Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V <sub>DS</sub>	-20	V
Gate-Source Voltage	V <sub>GS</sub>	±12	V
Continuous Drain Current	I <sub>D</sub>	-0.66	A
Pulsed Drain Current	I <sub>DM</sub>	-1.2	A
Power Dissipation	P <sub>D</sub>	0.15	W
Thermal Resistance from Junction to Ambient	R <sub>θJA</sub>	833	°C/W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-55 ~ +150	°C

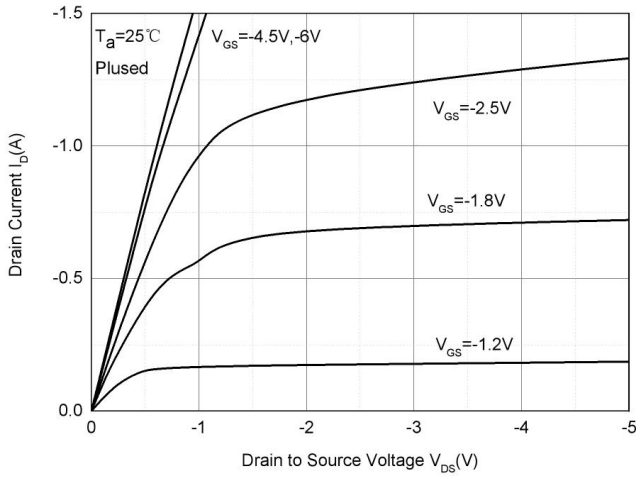
### Electrical characteristics (T<sub>A</sub>=25 °C, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA	-20			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> = -16V, V <sub>GS</sub> = 0V			-1	μA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> = ±10V, V <sub>DS</sub> = 0V			±10	μA
Gate threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA	-0.35	-0.65	-1.0	V
Drain-source on-resistance <sup>1)</sup>	R <sub>DS(on)</sub>	V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -0.5A		650	750	mΩ
		V <sub>GS</sub> = -2.5V, I <sub>D</sub> = -0.2A		850	1000	
<b>Dynamic characteristics<sup>2)</sup></b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = -16V, V <sub>GS</sub> = 0V, f = 1MHz		113		pF
Output Capacitance	C <sub>oss</sub>			15		
Reverse Transfer Capacitance	C <sub>rss</sub>			9		
Turn-on delay time	t <sub>d(on)</sub>	V <sub>DD</sub> = -10V, V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -0.2A R <sub>GEN</sub> = 10Ω		9		nS
Turn-on rise time	t <sub>r</sub>			5.7		
Turn-off delay time	t <sub>d(off)</sub>			32.6		
Turn-off fall time	t <sub>f</sub>			20.3		
<b>Source-Drain Diode characteristics</b>						
Diode Forward voltage	V <sub>DS</sub>	V <sub>GS</sub> = 0V, I <sub>S</sub> = -0.5A			-1.2	V

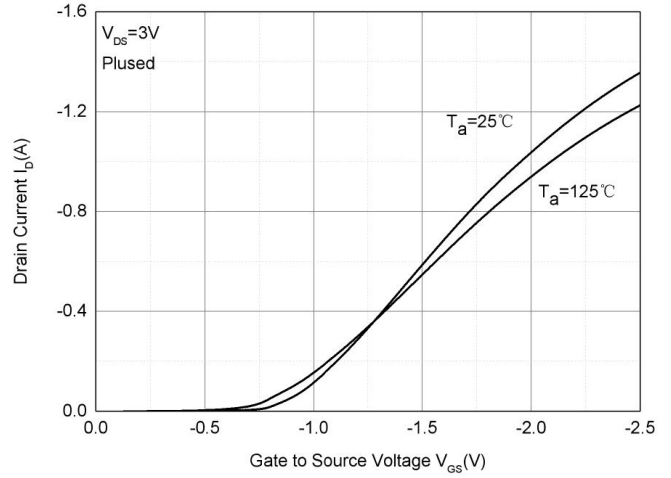
Notes:

- 1) Pulse Test: Pulse Width < 300μs, Duty Cycle ≤ 2%.
- 2) Guaranteed by design, not subject to production testing.

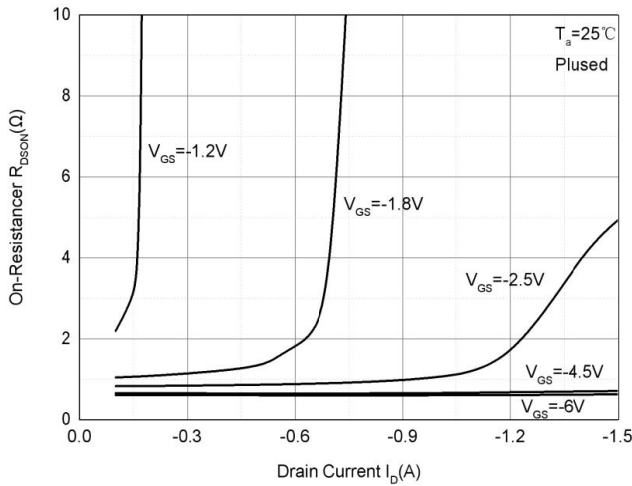
## Typical Characteristics



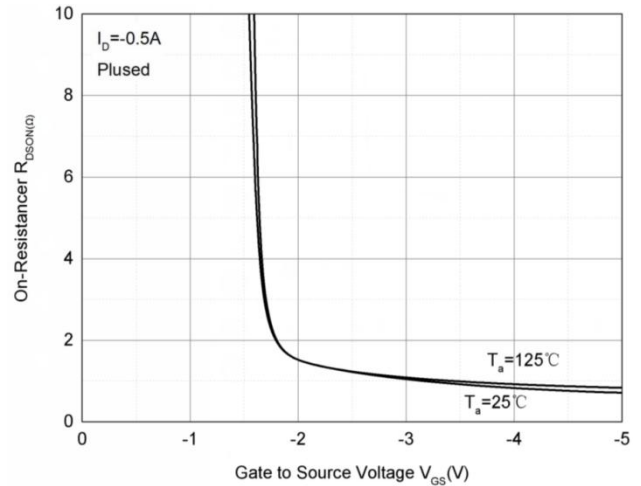
**Figure 1 Output Characteristics**



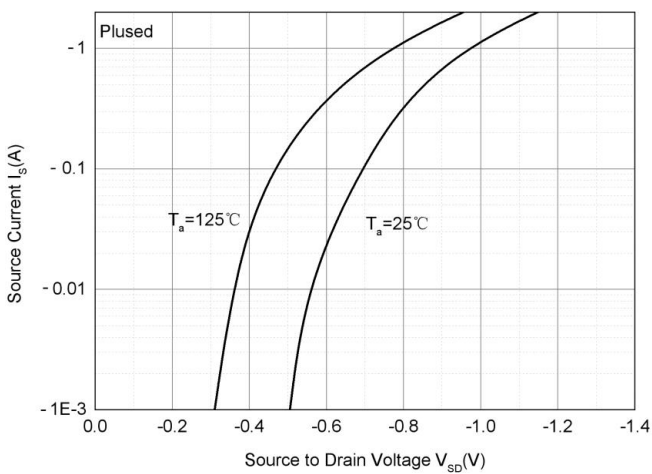
**Figure 2 Transfer Characteristics**



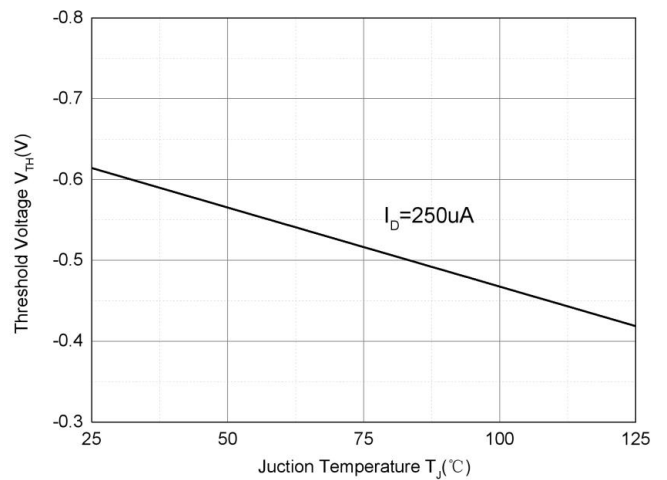
**Figure 3 R<sub>DS(on)</sub>- Drain Current**



**Figure 4 R<sub>DS(on)</sub>- Gate to Source Voltage**

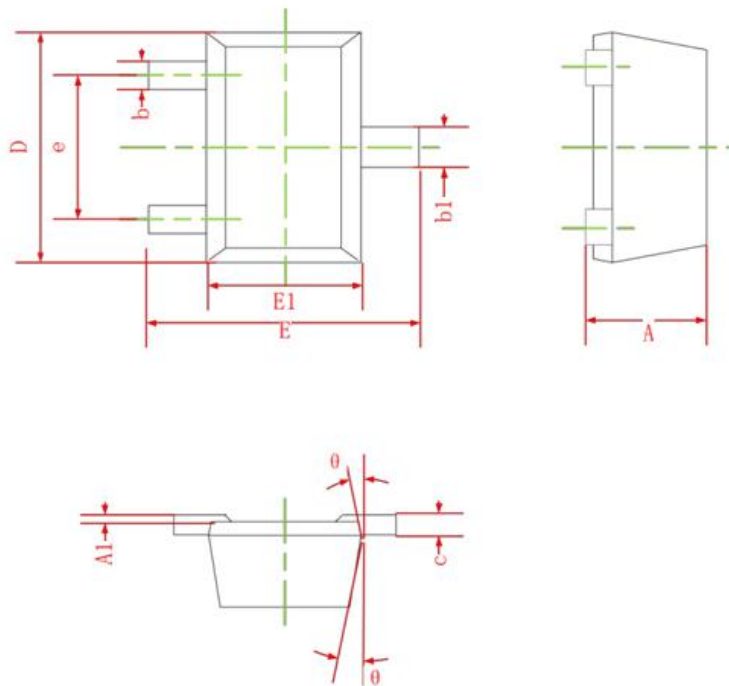


**Figure 5 Source- Drain Diode Forward**



**Figure 6 Threshold Voltage- Junction Temperature**

### 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	0.800 TYP.		0.031 TYP.	
$\theta$	7° REF.		7° REF.	