

## Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
-20V	400mΩ@-4.5V	-0.7A
	550mΩ@-2.5V	

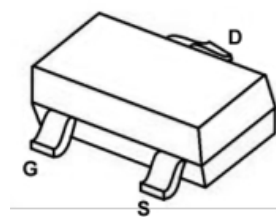
## Feature

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

## Applications

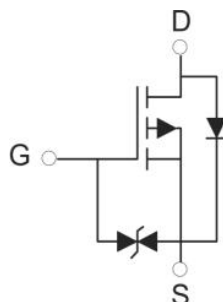
- Load/Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics

## Package

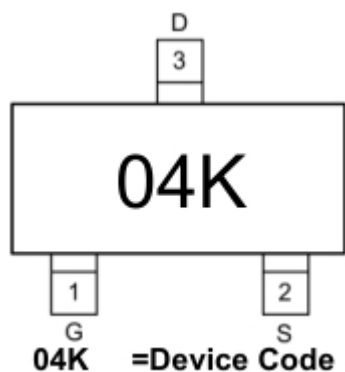


SOT-523

## Circuit diagram



## Marking



## Absolute maximum ratings

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	-20	V
Gate-Source Voltage	$V_{GS}$	$\pm 10$	V
Continuous Drain Current	$I_D$	-0.7	A
Pulsed Drain Current	$I_{DM}$	-1.2	A
Power Dissipation	$P_D$	0.15	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	833	$^{\circ}\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG.}$	-55~ +150	$^{\circ}\text{C}$

## Electrical characteristics

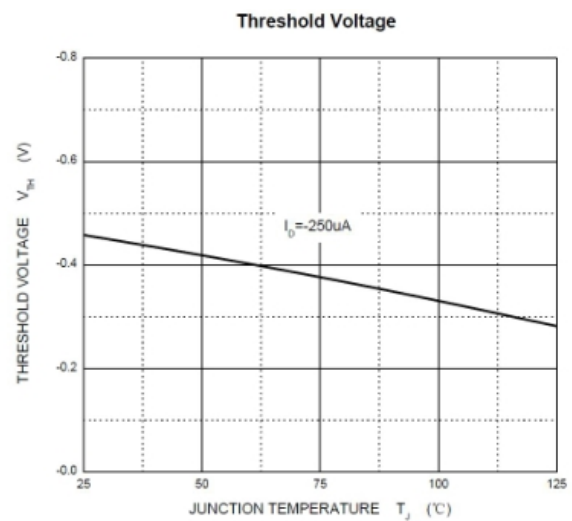
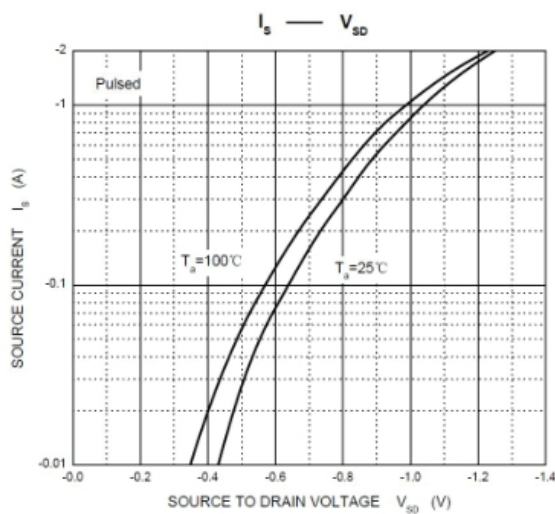
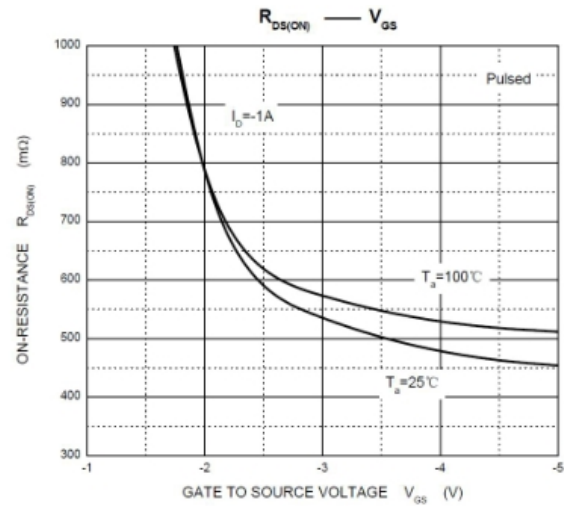
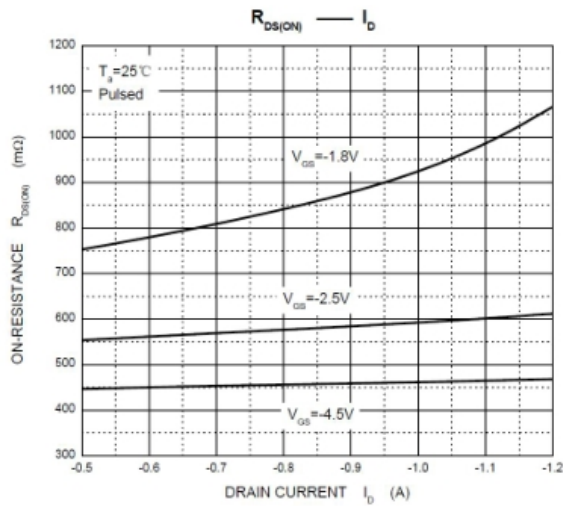
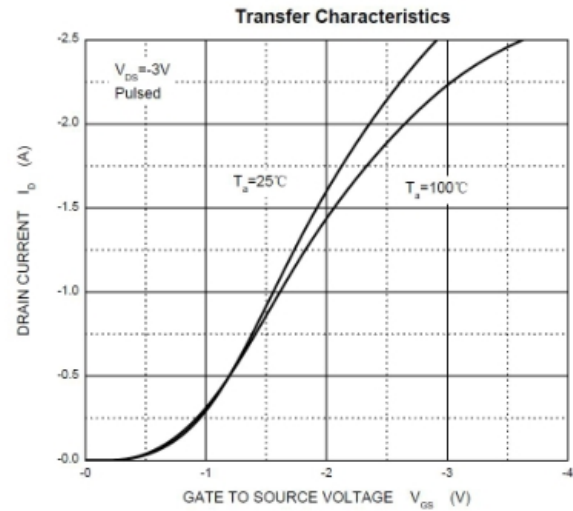
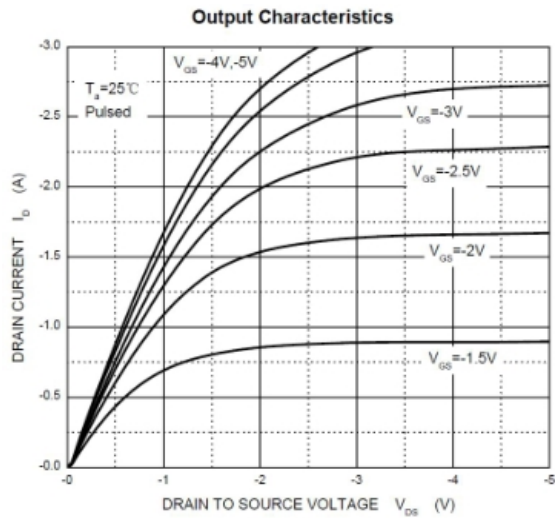
( $T_A=25^{\circ}\text{C}$ , unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV (BR)DSS	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> = -20V, V <sub>GS</sub> = 0V			-1	uA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> = ±10V, V <sub>DS</sub> = 0V			±10	uA
Gate threshold voltage <sup>(1)</sup>	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> = -250μA	-0.35	-0.65	-1	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		400	550	mΩ
		V <sub>GS</sub> = -2.5V, I <sub>D</sub> = -0.2A		550	700	
Dynamic Characteristics						
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>DS</sub> = -10V, I <sub>D</sub> = - 200mA , V <sub>GS</sub> = -4.5V, 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		
Source-Drain Diode Characteristics						
Diode Forward voltage	V <sub>SD</sub>	I <sub>S</sub> = -0.5A, V <sub>GS</sub> = 0V			-1.2	V

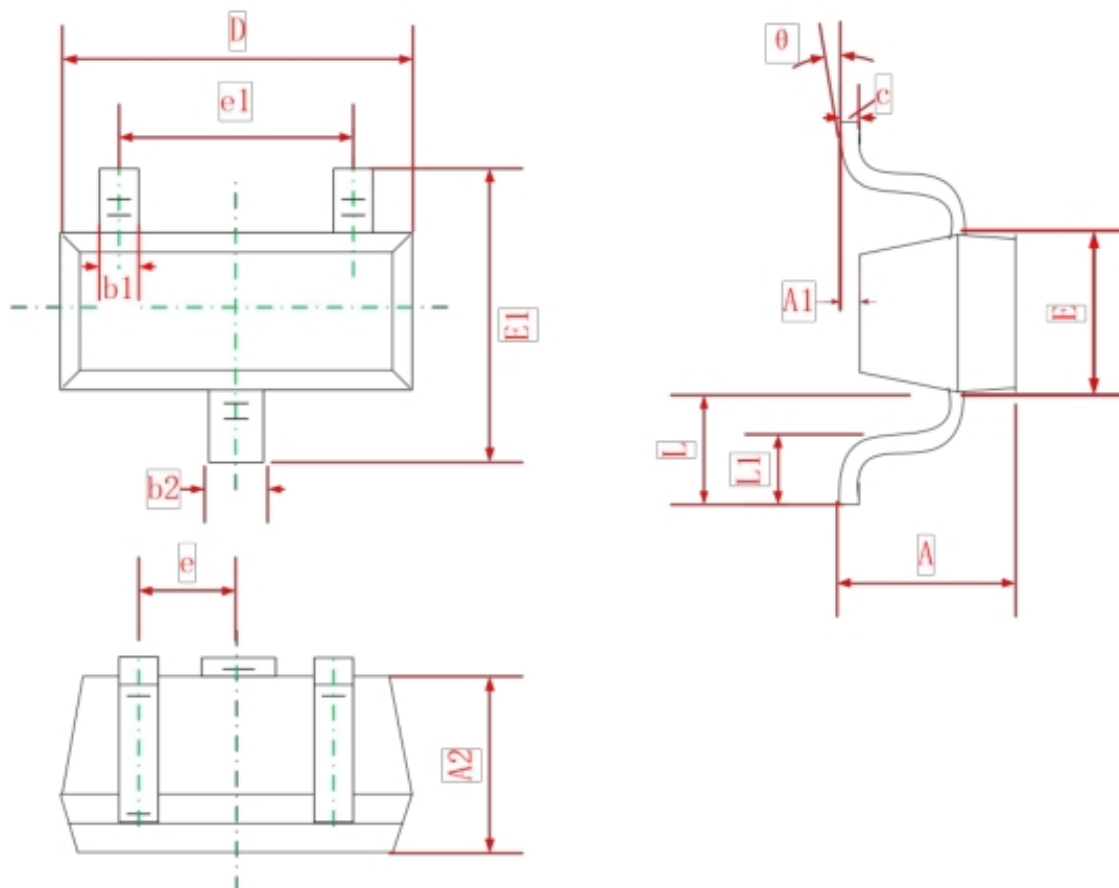
### Notes:

1. Pulse Test: Pulse Width < 300 $\mu s$ , Duty Cycle  $\leq 2\%$ .
2. Guaranteed by design, not subject to production testing.

## Typical Characteristics



## SOT-523 Package Information



Symbol	Dimensions In Millimeters	
	Min	Max
A	0.700	0.900
A1	0.000	0.100
A2	0.700	0.800
b1	0.150	0.250
b2	0.250	0.350
C	0.100	0.200
D	1.500	1.700
E	0.700	0.900
E1	1.450	1.750
e	0.500 TYP	
e1	0.900	1.100
L	0.400 REF	
L1	0.260	0.460
θ	0°	8°