

## Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
60V	70mΩ@10V	3A
	80mΩ@4.5V	

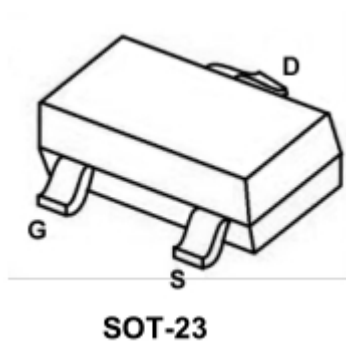
## Feature

- High power and current handing capability
- Surface mount package

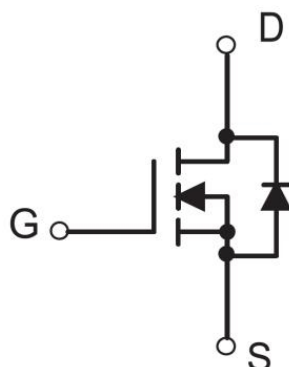
## Applications

- Battery switch
- DC/DC converter

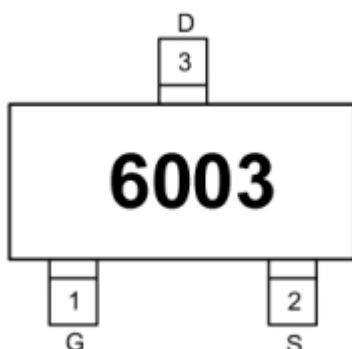
## Package



## Circuit diagram



## Marking



## Absolute maximum ratings

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	60	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current	$I_D$	3	A
Pulsed Drain Current	$I_{DM}$	12	A
Maximum Power Dissipation	$P_D$	1.2	W
Thermal Resistance from Junction to Ambient <sup>2)</sup>	$R_{\theta JA}$	104	$^{\circ}\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-55~ +150	$^{\circ}\text{C}$

## Electrical characteristics

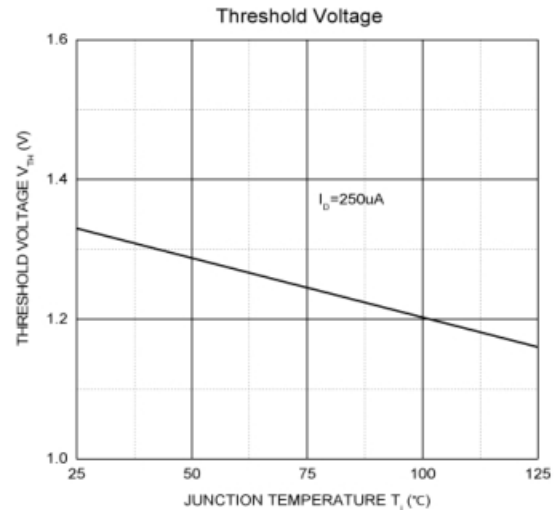
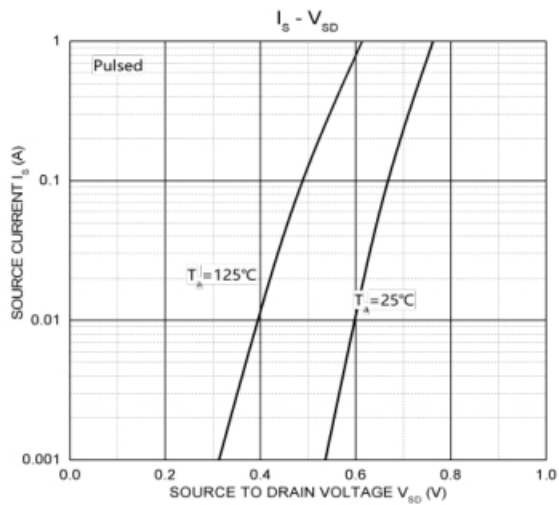
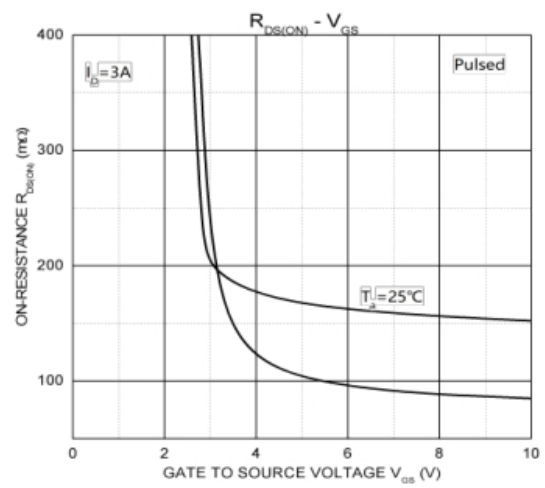
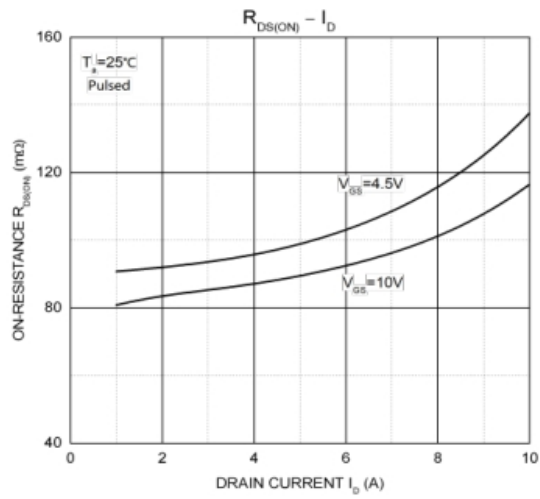
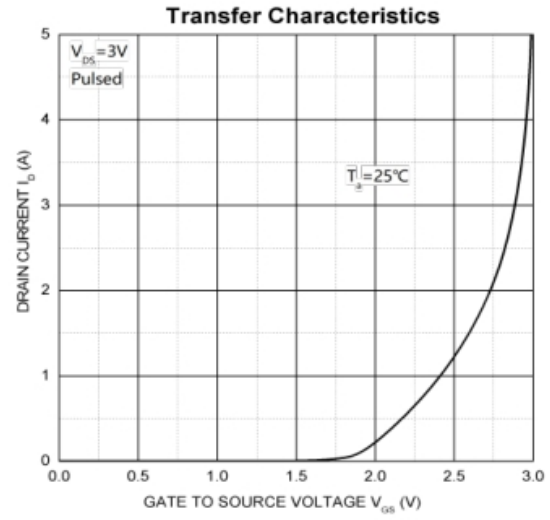
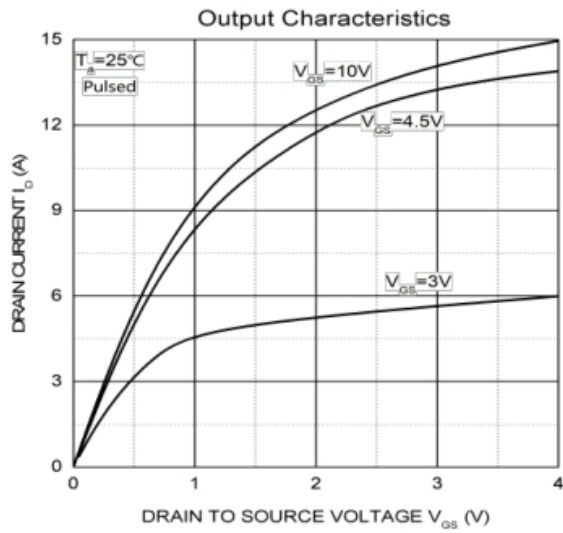
( $T_A=25^{\circ}\text{C}$ , unless otherwise noted)

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	60	66		V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> =60V, V <sub>GS</sub> = 0V			1	uA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> =±20V, V <sub>DS</sub> = 0V			±100	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	0.9	1.3	2.0	V
Drain-source on-resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =3A		70	90	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =2A		80	105	
Dynamic Characteristics <sup>4)</sup>						
Input Capacitance	C <sub>iSS</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =0V, f=1MHz		330		pF
Output Capacitance	C <sub>OSS</sub>			90		
Reverse Transfer Capacitance	C <sub>rSS</sub>			17		
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =4.5V, I <sub>D</sub> =3A		5.1		nC
Gate-Source Charge	Q <sub>gs</sub>			1.3		
Gate-Drain Charge	Q <sub>gd</sub>			1.7		
Switching Characteristics <sup>4)</sup>						
Turn-on Delay Time	T <sub>d(on)</sub>	V <sub>GS</sub> =10V, V <sub>DD</sub> =30V, I <sub>D</sub> =1.5A , R <sub>L</sub> =1Ω, R <sub>GEN</sub> =3Ω,		13		nS
Turn-on Rise Time	T <sub>r</sub>			51		
Turn-Off Delay Time	T <sub>d(off)</sub>			19		
Turn-Off Fall Time	t <sub>f</sub>			12		
Source-Drain Diode Characteristics						
Body diode voltage	V <sub>SD</sub>	I <sub>S</sub> =1A, V <sub>GS</sub> =0V			1.2	V

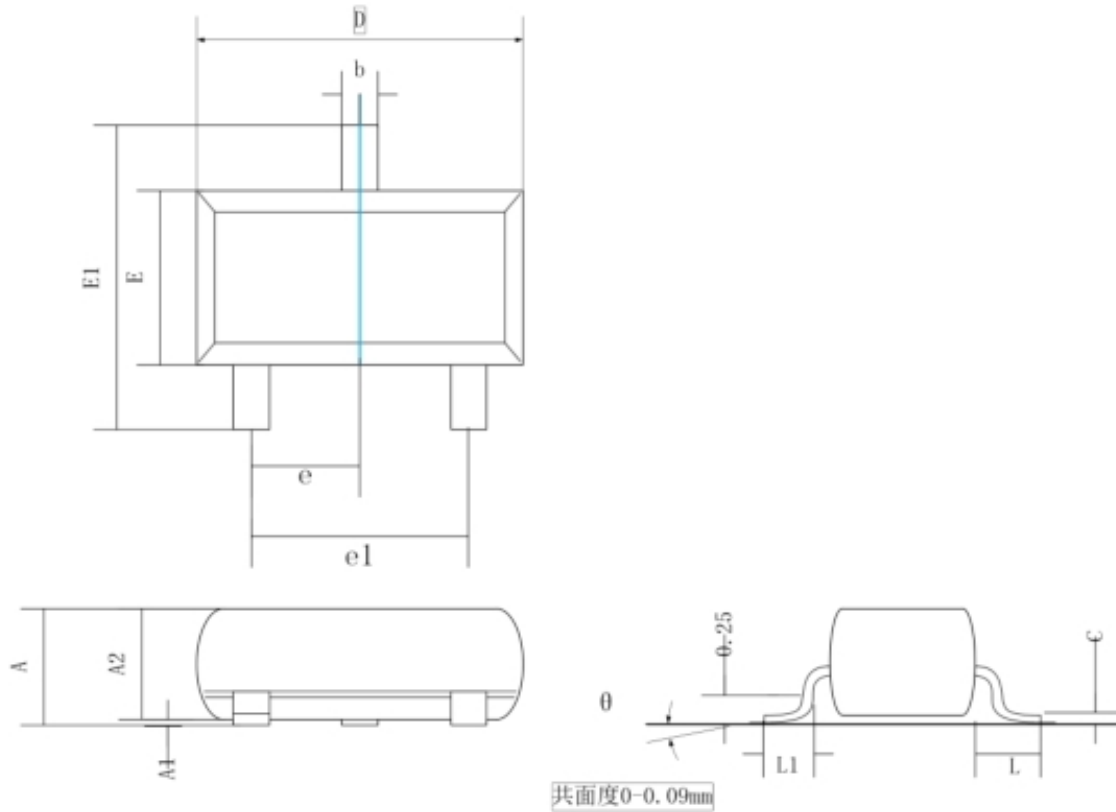
### Notes:

1. Repetitive rating: Pulse width limited by junction temperature.
2. Surface mounted on FR4 board,  $t \leq 10s$ .
3. Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 0.5\%$ .
4. Guaranteed by design, not subject to production.

## Typical Characteristics



## SOT-23 Package Information



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.90	1.15
A1	0.00	0.10
A2	0.90	1.05
b	0.30	0.50
c	0.08	0.15
D	2.80	3.00
E	1.20	1.40
E1	2.25	2.55
e	0.95 REF.	
e1	1.80	2.00
L	0.55 REF.	
L1	0.30	0.50
$\theta$	0°	8°