

## Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
20V	250mΩ@4.5V	0.75A
	350mΩ@2.5V	

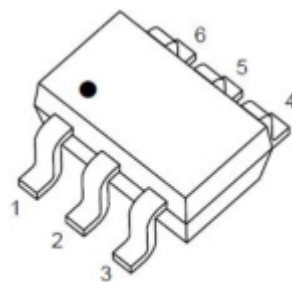
## Feature

- Surface Mount Package
- N-Channel Switch with Low  $R_{DS(on)}$
- Operated at Low Logic Level Gate Drive
- ESD Protected: HBM 2kV

## Applications

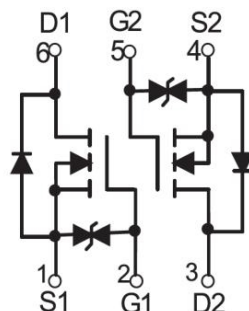
- Load/Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift

## Package



**SOT-363**

## Circuit diagram



## Marking



**02K =Device Code**

## Absolute maximum ratings

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

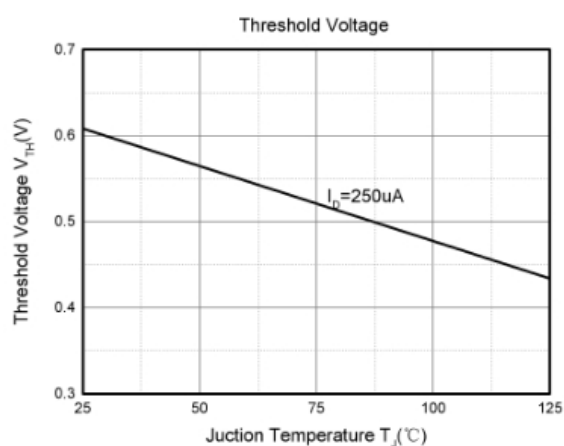
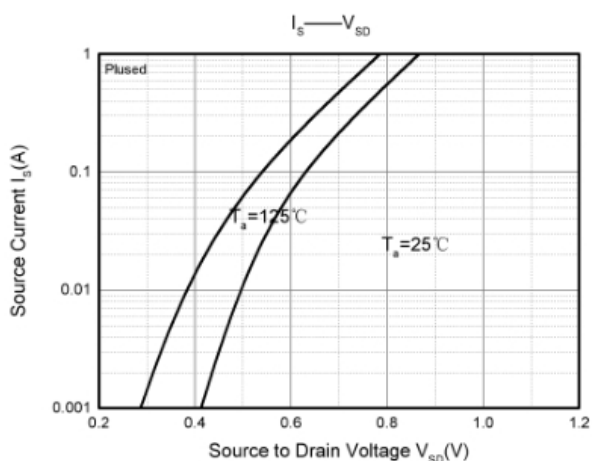
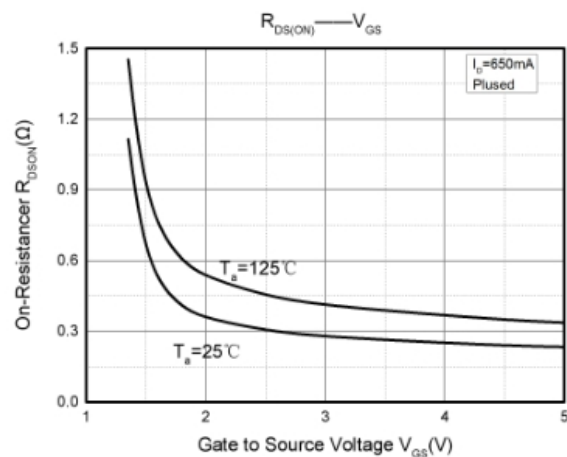
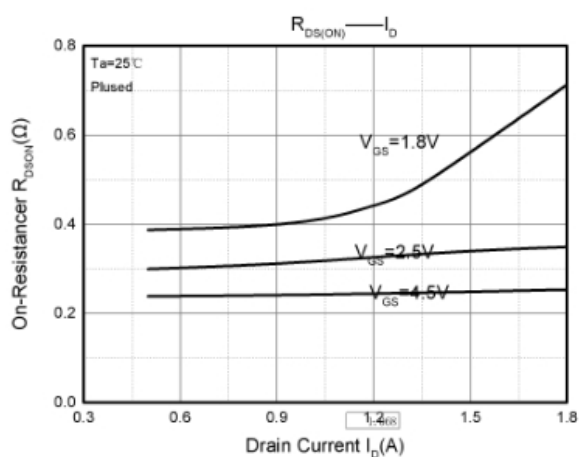
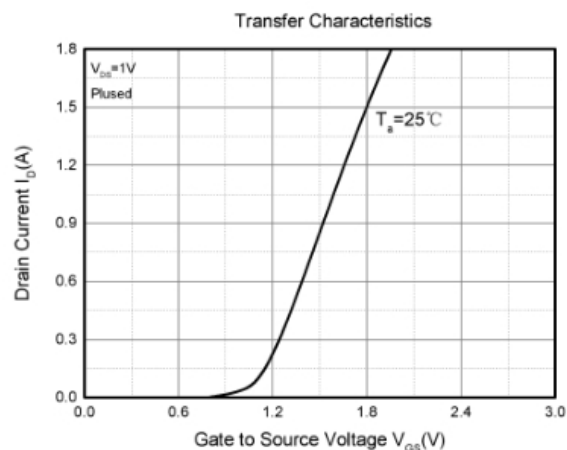
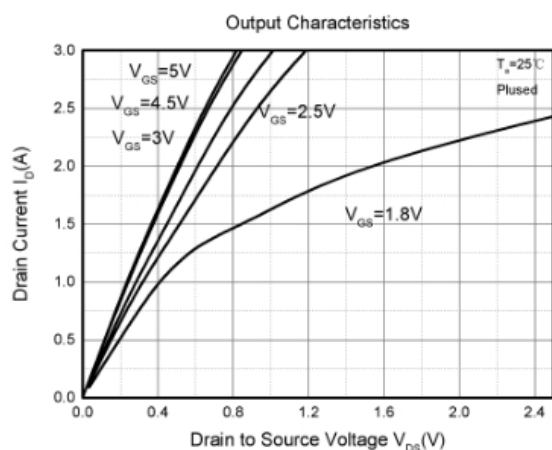
Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	20	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	V
Continuous Drain Current	$I_D$	0.75	A
Pulsed Drain Current	$I_{DM}$	1.8	A
Power Dissipation	$P_D$	0.2	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	833	$^{\circ}\text{C/W}$
Junction Temperature	$T_J$	150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG.}$	-55~ +150	$^{\circ}\text{C}$

## Electrical characteristics

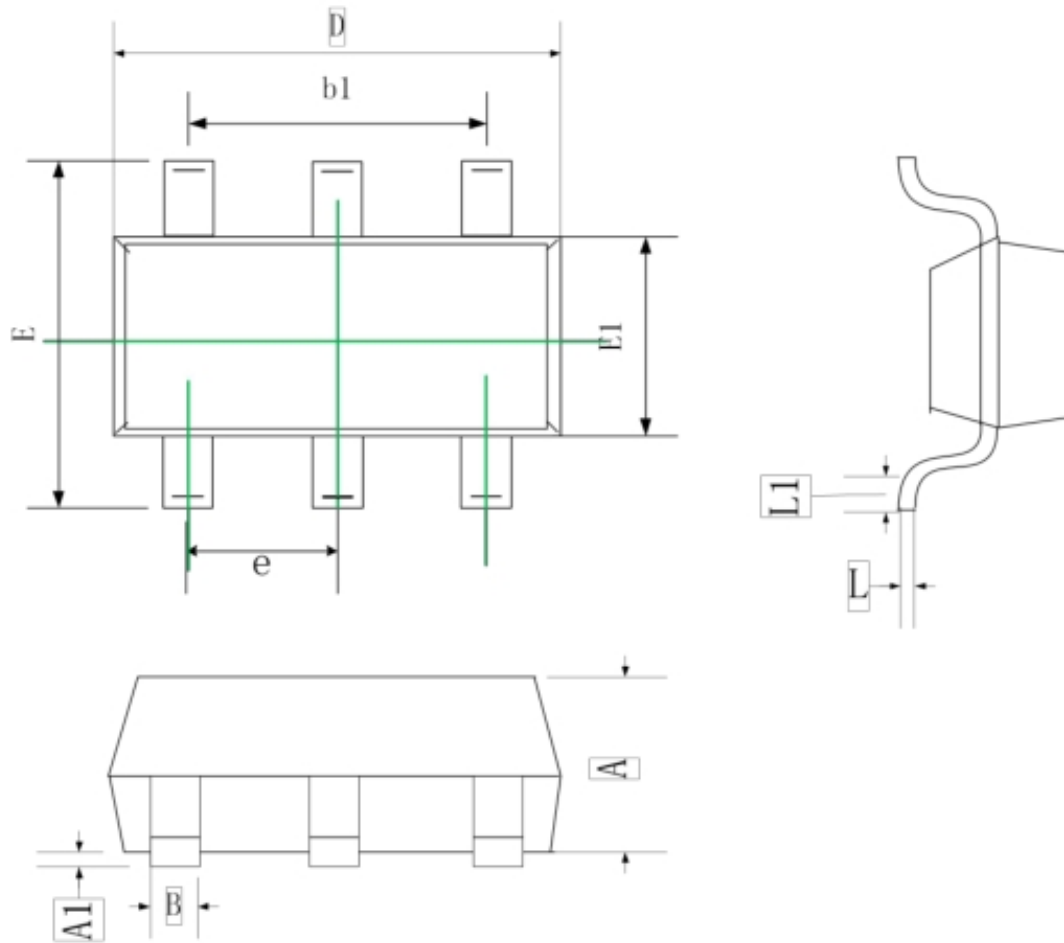
( $T_A=25^{\circ}\text{C}$ , unless otherwise noted)

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> =16V, 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	0.3	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		0.25	0.38	mΩ
		V <sub>GS</sub> =2.5V, I <sub>D</sub> =0.5A		0.35	0.45	
Dynamic Characteristics						
Input capacitance	C <sub>iss</sub>	V <sub>DS</sub> =16V, V <sub>GS</sub> =0V, f=1MHz		79	120	pF
Output capacitance	C <sub>OSS</sub>			13	20	
Reverse transfer capacitance	C <sub>rss</sub>			9	15	
Switching Parameters						
Turn-on Delay Time	T <sub>d(on)</sub>	V <sub>GS</sub> =4.5V, V <sub>DS</sub> =10V, I <sub>D</sub> =500mA ,R <sub>GEN</sub> =10Ω		6.7		nS
Turn-on Rise Time	T <sub>r</sub>			4.8		
Turn-Off Delay Time	T <sub>d(off)</sub>			17.3		
Turn-Off Fall Time	t <sub>f</sub>			7.4		
Source-Drain Diode Characteristics						
Body Diode Voltage	V <sub>SD</sub>	I <sub>S</sub> =0.5A, V <sub>GS</sub> = 0V		0.7	1.3	V

## Typical Characteristics



## SOT-363 Package Information



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.90	1.00
A1	0.00	0.10
B	0.10	0.30
b1	1.30	
D	1.80	2.20
E	2.00	2.20
E1	1.15	1.35
e	0.65 TYP.	
L	0.10	0.25
L1	0.15	0.4