



## N-channel MOSFET

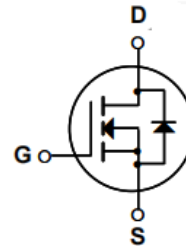
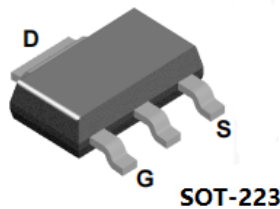
### Features

- 100V,3A
- $R_{DS(ON)} = 250m\Omega$  (Typ.) @  $V_{GS} = 10V$   
 $R_{DS(ON)} = 260m\Omega$  (Typ.) @  $V_{GS} = 4.5V$
- High Density Cell Design for Ultra Low  $R_{DS(ON)}$
- Fully Characterized Avalanche Voltage and Current
- Excellent Package for Good Heat Dissipation

### Application

- Networking
- BMS
- Hand-held Electric TOOL
- DC-DC Power Management
- Audio amplifier

### Package



### Absolute Maximum Ratings (T<sub>C</sub>=25°C unless otherwise specified)

Symbol	Parameter	Max.	Units
V <sub>DSS</sub>	Drain-Source Voltage	100	V
V <sub>GSS</sub>	Gate-Source Voltage	±20	V
I <sub>D</sub>	Continuous Drain Current	T <sub>C</sub> = 25°C	3
		T <sub>C</sub> = 100°C	1.5
I <sub>DM</sub>	Pulsed Drain Current <small>note1</small>	12	A
P <sub>D</sub>	Power Dissipation	T <sub>A</sub> = 25°C	2.5
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient	50	°C/W
T <sub>J</sub> , T <sub>STG</sub>	Operating and Storage Temperature Range	-55 to +150	°C



## Electrical Characteristics (T<sub>C</sub>=25°C unless otherwise specified)

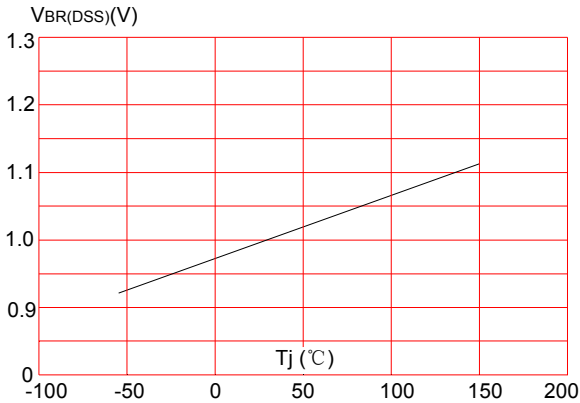
Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
<b>Off Characteristic</b>						
V <sub>(BR)DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V, I <sub>D</sub> =250μA	100	-	-	V
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> =100V, V <sub>GS</sub> = 0V,	-	-	1.0	μA
I <sub>GSS</sub>	Gate to Body Leakage Current	V <sub>DS</sub> =0V, V <sub>GS</sub> = ±20V	-	-	±100	nA
<b>On Characteristics</b>						
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> =250μA	1.0	1.8	3.0	V
R <sub>DSON</sub>	Static Drain-Source on-Resistance <small>note2</small>	V <sub>GS</sub> =10V, I <sub>D</sub> =2A	-	250	280	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =1A	-	260	310	
g <sub>FS</sub>	Forward Transconductance	V <sub>DS</sub> =10V, I <sub>D</sub> =3A	-	1.1	-	S
<b>Dynamic Characteristics</b>						
C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> =50V, V <sub>GS</sub> = 0V, f = 1.0MHz	-	340	-	pF
C <sub>oss</sub>	Output Capacitance		-	92	-	pF
C <sub>rss</sub>	Reverse Transfer Capacitance		-	17	-	pF
Q <sub>g</sub>	Total Gate Charge	V <sub>DS</sub> =50V, I <sub>D</sub> =1A, V <sub>GS</sub> =10V	-	5.2	-	nC
Q <sub>gs</sub>	Gate-Source Charge		-	1.0	-	nC
Q <sub>gd</sub>	Gate-Drain("Miller") Charge		-	1.4	-	nC
<b>Switching Characteristics</b>						
t <sub>d(on)</sub>	Turn-on Delay Time	V <sub>DD</sub> =50V, R <sub>L</sub> =39Ω, R <sub>G</sub> =1Ω, V <sub>GS</sub> =10V	-	14	-	ns
t <sub>r</sub>	Turn-on Rise Time		-	54	-	ns
t <sub>d(off)</sub>	Turn-off Delay Time		-	18	-	ns
t <sub>f</sub>	Turn-off Fall Time		-	11	-	ns
<b>Drain-Source Diode Characteristics and Maximum Ratings</b>						
I <sub>S</sub>	Maximum Continuous Drain to Source Diode Forward Current		-	-	3	A
I <sub>SM</sub>	Maximum Pulsed Drain to Source Diode Forward Current		-	-	12	A
V <sub>SD</sub>	Drain to Source Diode Forward Voltage	V <sub>GS</sub> = 0V, I <sub>S</sub> =1A	-	-	1.2	V

Notes:1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

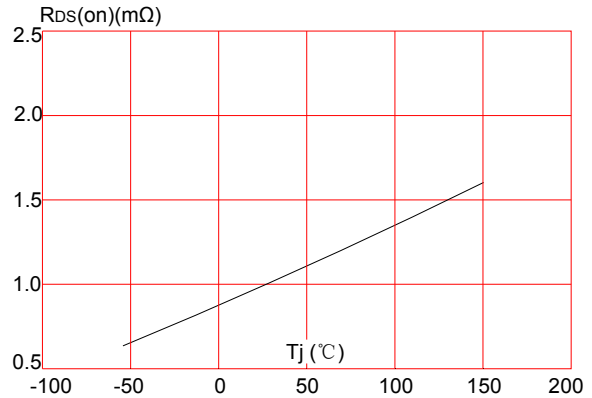
2. Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%



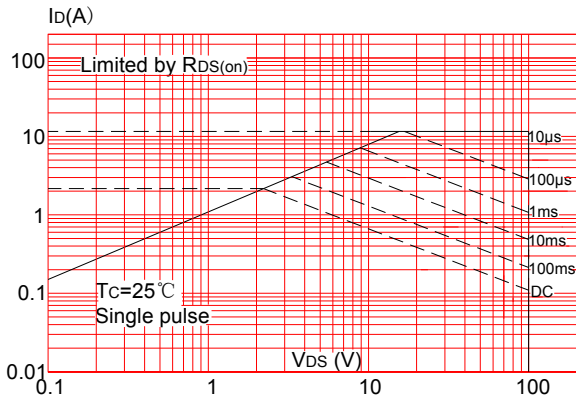
**Figure 7:** Normalized Breakdown Voltage vs. Junction Temperature



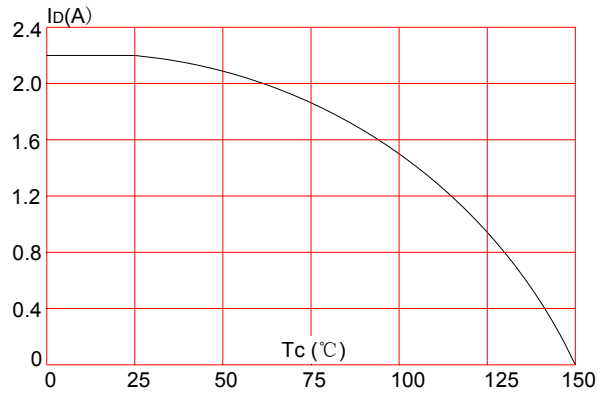
**Figure 8:** Normalized on Resistance vs. Junction Temperature



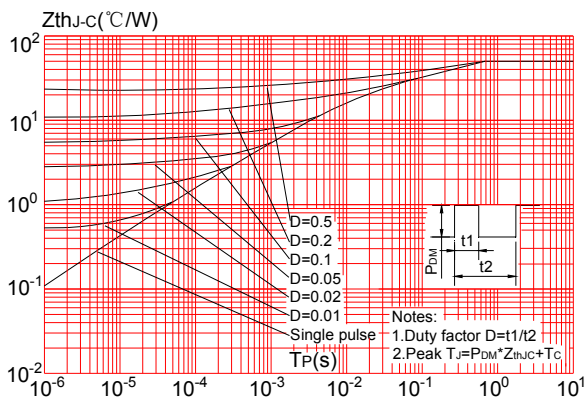
**Figure 9:** Maximum Safe Operating Area

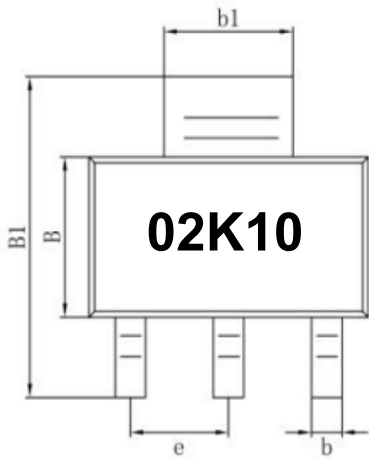
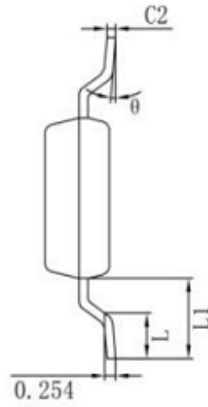
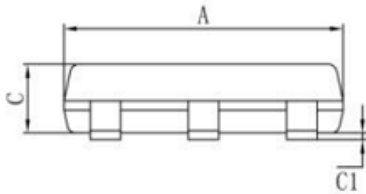


**Figure 10:** Maximum Continuous Drain Current vs. Case Temperature



**Figure.11:** Maximum Effective Transient Thermal Impedance, Junction-to-Ambient



**Package Mechanical Data**

**MARKING : 02K10**


尺寸数据:		单位: mm		
标注	Min	Nom	Max	备注
A	6.40	6.50	6.60	
e	2.286TYP			
b	0.66	0.70	0.76	
b1	2.95	3.00	3.05	
B	3.40	3.50	3.60	
B1	6.85	7.00	7.15	
C	1.45	1.55	1.65	
C1	0.03	0.07	0.15	
C2	0.20	0.3	0.35	
L	0.76	0.96	1.16	
L1	1.70	1.75	1.80	
O	0° -8°			

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