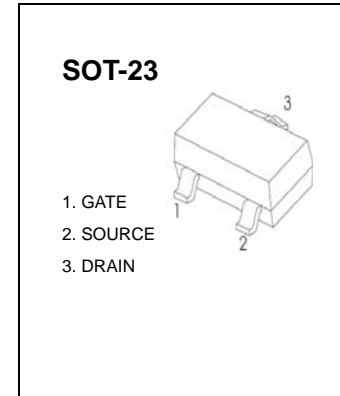


# SOT-23 Plastic-Encapsulate MOSFETS

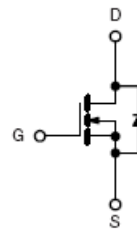
N-Channel Enhancement Mode Field Effect Transistor

## FEATURE

- High dense cell design for extremely low  $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability



**MARKING: 3400**



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	V
Continuous Drain Current	$I_D$	5.8	A
Drain Current-Pulsed (note 1)	$I_{DM}$	30	A
Power Dissipation	$P_D$	350	mW
Thermal Resistance from Junction to Ambient (note 2)	$R_{\theta JA}$	357	$^\circ\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55~+150	$^\circ\text{C}$

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

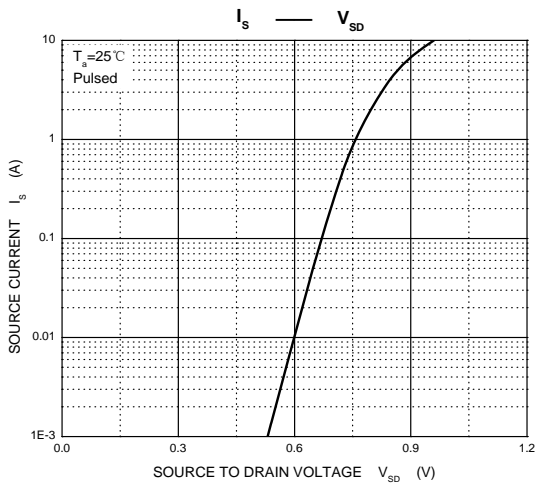
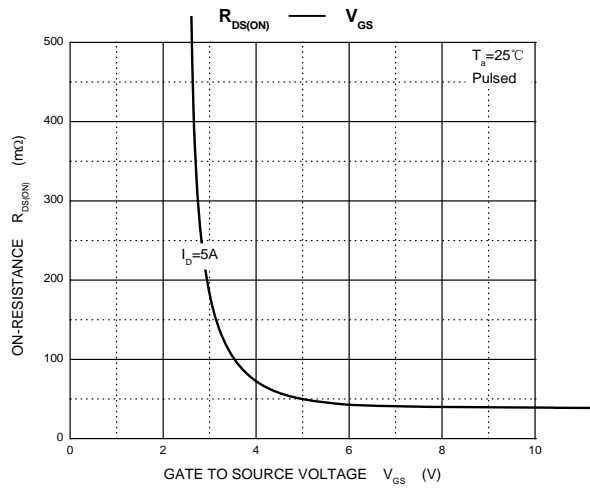
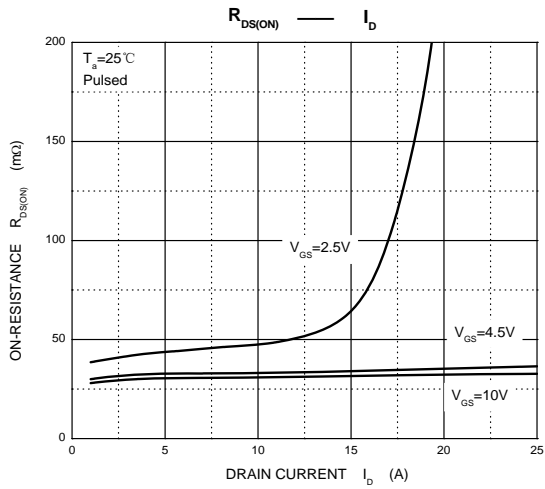
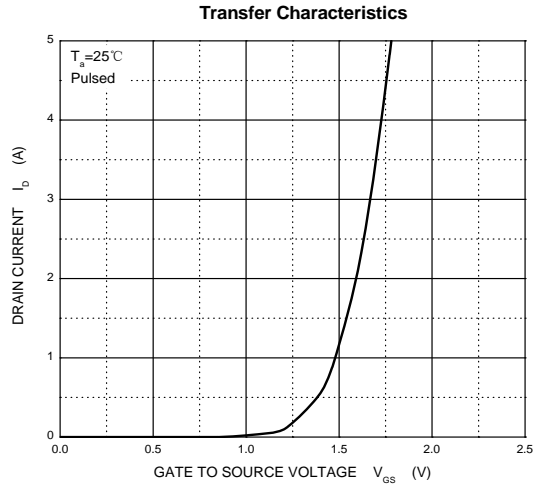
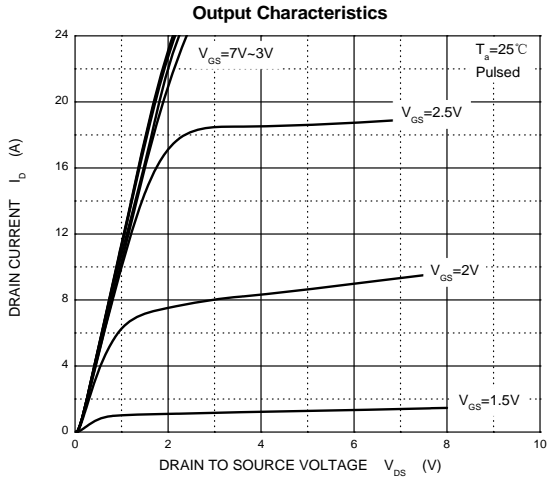
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
<b>Off Characteristics</b>						
Drain-source breakdown voltage	V <sub>(BR) DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> =250μA	30			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> =24V, V <sub>GS</sub> = 0V			1	μA
Gate-source leakage current	I <sub>GSS</sub>	V <sub>GS</sub> =±12V, V <sub>DS</sub> = 0V			±100	nA
<b>On characteristics</b>						
Drain-source on-resistance (note 3)	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =5.8A			35	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =5A			40	mΩ
		V <sub>GS</sub> =2.5V, I <sub>D</sub> =4A			52	mΩ
Forward tranconductance	g <sub>FS</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =5A	8			S
Gate threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	0.7		1.4	V
<b>Dynamic Characteristics (note 4,5)</b>						
Input capacitance	C <sub>iss</sub>	V <sub>DS</sub> =15V, V <sub>GS</sub> =0V, f =1MHz			1050	pF
Output capacitance	C <sub>oss</sub>			99		pF
Reverse transfer capacitance	C <sub>rss</sub>			77		pF
Gate resistance	R <sub>g</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =0V, f =1MHz			3.6	Ω
<b>Switching Characteristics (note 4,5)</b>						
Turn-on delay time	t <sub>d(on)</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =15V, R <sub>L</sub> =2.7Ω, R <sub>GEN</sub> =3Ω			5	ns
Turn-on rise time	t <sub>r</sub>				7	ns
Turn-off delay time	t <sub>d(off)</sub>				40	ns
Turn-off fall time	t <sub>f</sub>				6	ns
<b>Drain-source diode characteristics and maximum ratings</b>						
Diode forward voltage (note 3)	V <sub>SD</sub>	I <sub>S</sub> =1A, V <sub>GS</sub> =0V			1	V

**Note :**

1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t < 5 sec.
3. Pulse Test : Pulse Width≤300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production testing.

# Typical Characteristics

# BC3400



## **PACKAGE OUTLINE**

**Plastic surface mounted package; 3 leads**

**SOT-23**

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