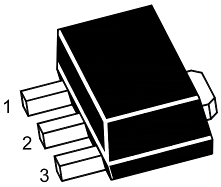
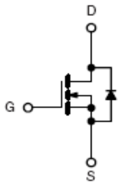
SOT-89
CB3400U

SOT-89 Plastic-Encapsulate MOSFETS

N-Channel Enhancement Mode Field Effect Transistor

SOT-89 Plastic Package





1. GATE
2. DRAIN
3. SOURCE

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℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	5.8	A
Drain Current-Pulsed (note 1)	I_{DM}	30	A
Power Dissipation	P_D	500	mW
Thermal Resistance from Junction to Ambient (note 2)	$R_{\theta JA}$	250	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~+150	℃

Electrical characteristics (T_a=25℃ unless otherwise noted)

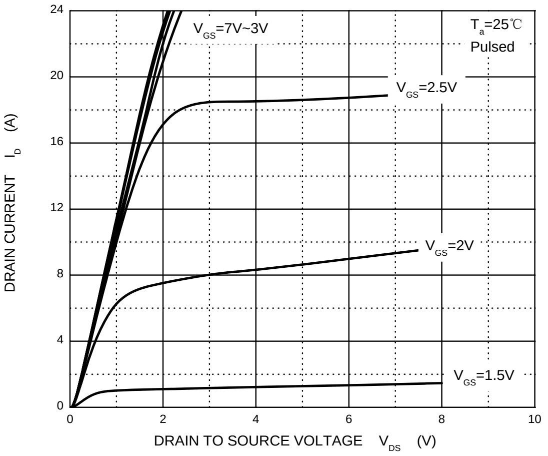
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Off Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250µA	30			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =24V,V_{GS} = 0V			1	µA
Gate-source leakage current	I_{GSS}	V_{GS} =±12V, V_{DS} = 0V			±100	nA
On characteristics						
Drain-source on-resistance (note 3)	$R_{DS(on)}$	V_{GS} =10V, I_D =5.8A			35	mΩ
		V_{GS} =4.5V, I_D =5A			40	mΩ
		V_{GS} =2.5V,I_D=4A			52	mΩ
Forward tranconductance	g_{FS}	V_{DS} =5V, I_D =5A	8			S
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250µA	0.7		1.4	V
Dynamic Characteristics (note 4,5)						
Input capacitance	C_{iss}	V_{DS} =15V,V_{GS} =0V,f =1MHz			1050	pF
Output capacitance	C_{oss}			99		pF
Reverse transfer capacitance	C_{rss}			77		pF
Gate resistance	R_g	V_{DS} =0V,V_{GS} =0V,f =1MHz			3.6	Ω
Switching Characteristics (note 4,5)						
Turn-on delay time	$t_{d(on)}$	V_{GS}=10V,V_{DS}=15V, R_L=2.7Ω,R_{GEN}=3Ω			5	ns
Turn-on rise time	t_r				7	ns
Turn-off delay time	$t_{d(off)}$				40	ns
Turn-off fall time	t_f				6	ns
Drain-source diode characteristics and maximum ratings						
Diode forward voltage (note 3)	V_{SD}	I_S=1A,V_{GS}=0V			1	V

Note :

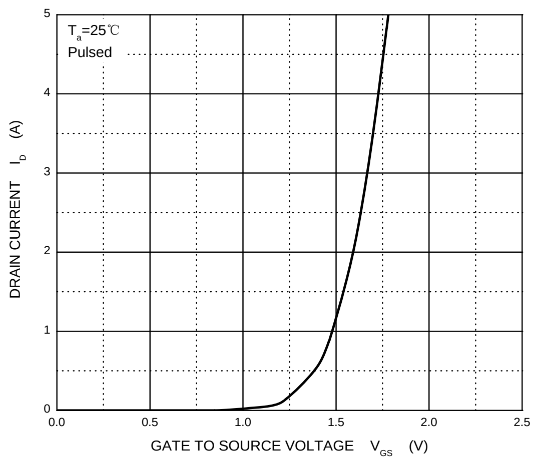
1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t < 5 sec.
3. Pulse Test : Pulse Width≤300µs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production testing.

Typical Characteristics

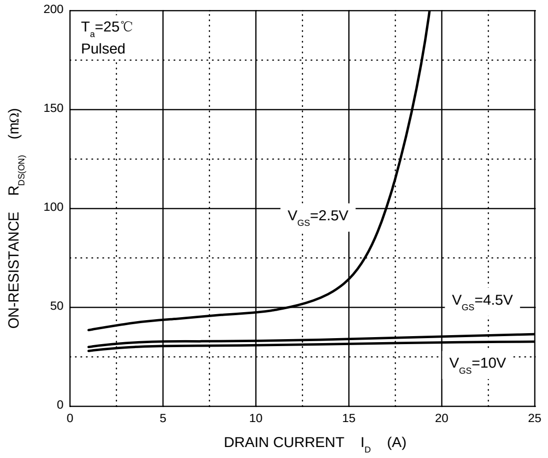
Output Characteristics



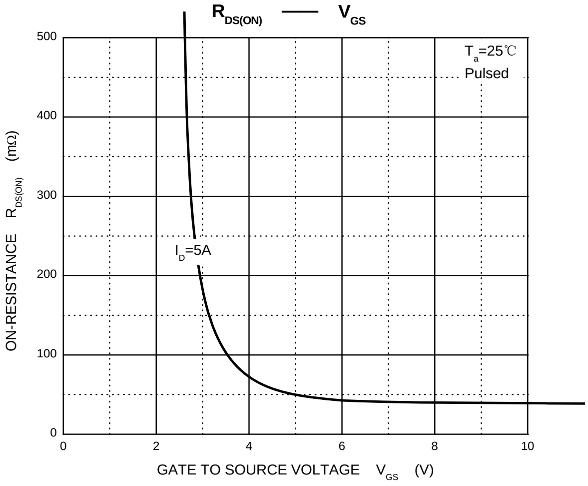
Transfer Characteristics



$R_{DS(ON)}$ —— I_D



$R_{DS(ON)}$ —— V_{GS}



I_S —— V_{SD}