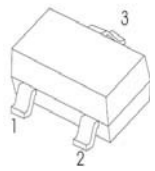
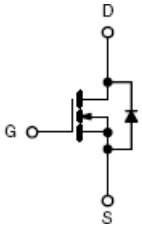
BC3406 N-Channel Enhancement Mode Field Effect Transistor

SOT-23 Plastic-Encapsulate MOSFETS

SOT-23



1.GATE
2..SOURCE
3. DRAIN



DESCRIPTION

The BC3406 use advanced trench technology to provide excellent $R_{DS(ON)}$ and low gate charge. This device is suitable for use as a load switch or in PWM applications.

MARKING: R6

Maximum ratings (T_a=25℃ unless otherwise noted)

Parameter	Symbo	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±2	V
Continuous Drain Current	I_D	3.6	A
Drain Current-Pulsed (note 1)	I_{DM}	15	A
Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

Electrical characteristics (T_a=25℃ unless otherwise noted)

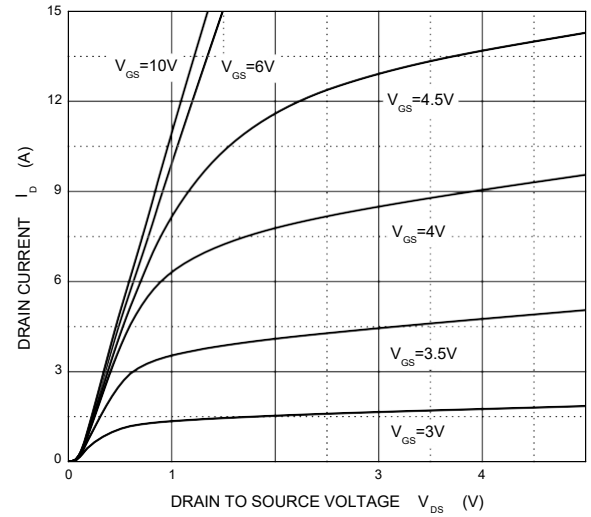
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
STATIC PARAMETERS						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	30			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =24V,V_{GS} = 0V			1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±100	nA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1		3	V
Drain-source on-resistance (note 2)	$R_{DS(on)}$	V_{GS} =10V, I_D =3.6A			65	mΩ
		V_{GS} =4.5V, I_D =2.8A			105	mΩ
Forward tranconductance (note 2)	g_{FS}	V_{DS} =5V, I_D =3.6A	3			S
Diode forward voltage	V_{SD}	I_S=1A			1	V
DYNAMIC PARAMETERS (note 3)						
Input capacitance	C_{iss}	V_{DS} =15V,V_{GS} =0V,f =1MHz			375	pF
Output capacitance	C_{oss}			57		pF
Reverse transfer capacitance	C_{rss}			39		pF
Gate resistance	R_g	V_{DS} =0V,V_{GS} =0V,f =1MHz			6	Ω
SWITCHING PARAMETERS (note 3)						
Turn-on delay time	$t_{d(on)}$	V_{GS}=10V,V_{DS}=15V, R_L=2.2Ω,R_{GEN}=3Ω		4.6		ns
Turn-on rise time	t_r			1.9		ns
Turn-off delay time	$t_{d(off)}$			20.1		ns
Turn-off fall time	t_f			2.6		ns

Notes :

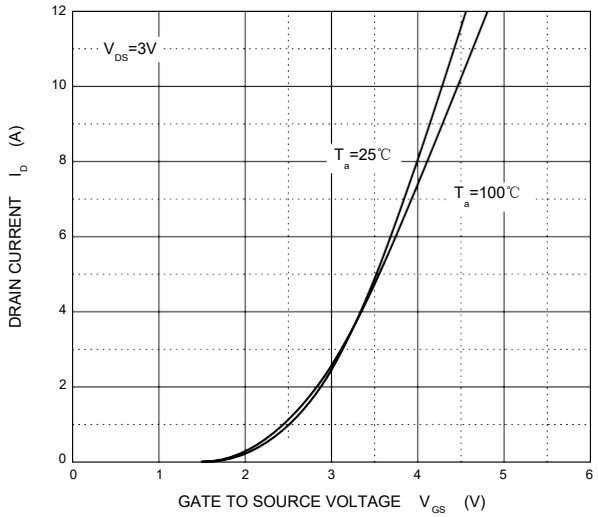
1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Pulse Test : Pulse width ≤300μs, duty cycle≤ 0.5%.
3. These parameters have no way to verify.

Typical Characteristics

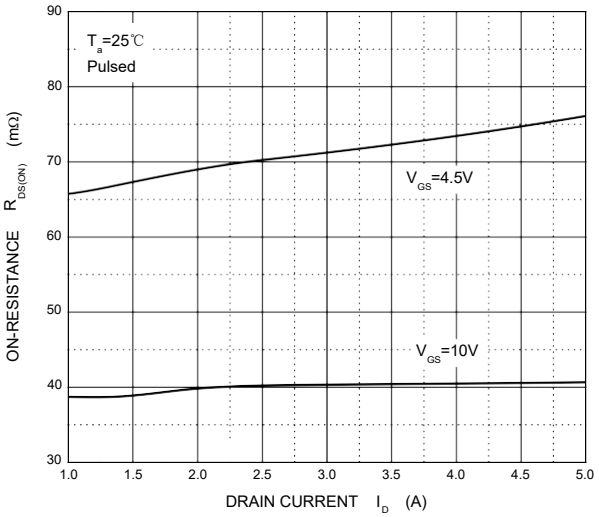
Output Characteristics



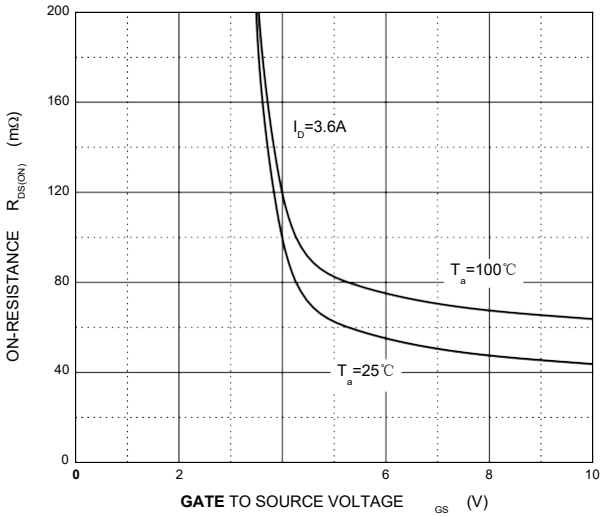
Transfer Characteristics



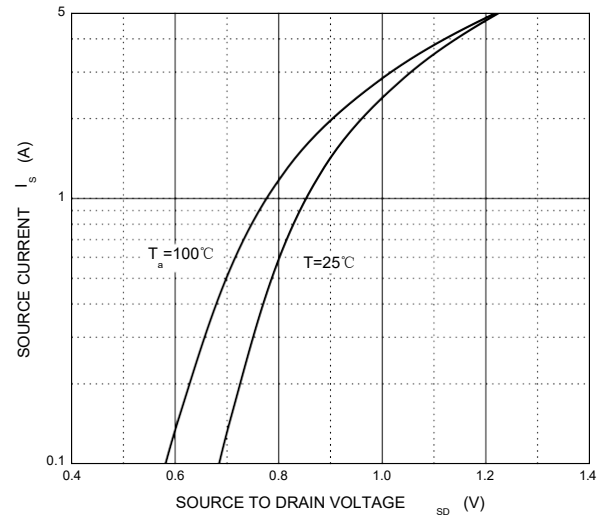
$R_{DS(ON)}$ —— I_D



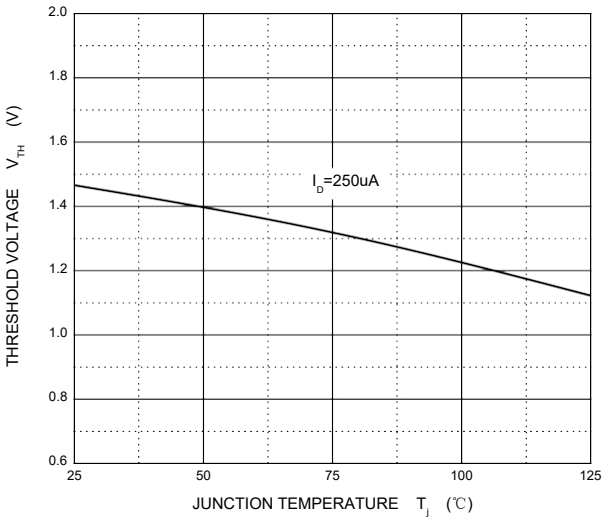
$R_{DS(ON)}$ —— V_{GS}



I_S —— V_{SD}

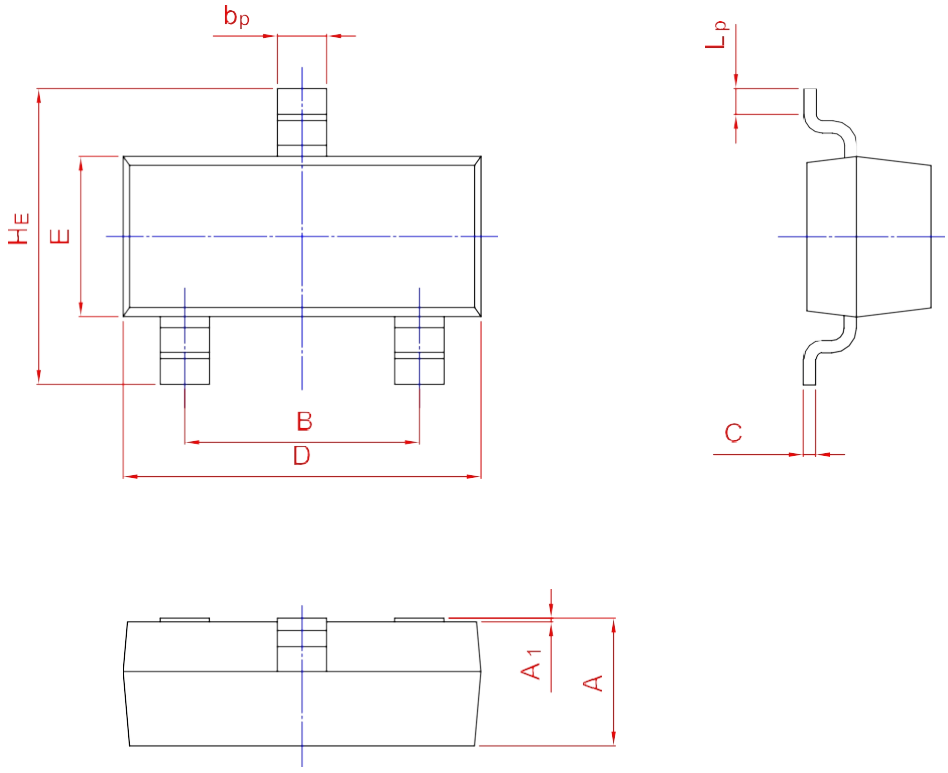


Threshold Voltage



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads **SOT-23**



UNIT	A	B	bp	C	D	E	HE	A1	Lp
mm	1.40 0.95	2.04 1.78	0.50 0.35	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20