

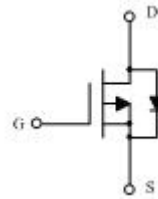


FEATURE

TrenchFET Power MOSFET

APPLICATIONS

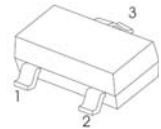
Load Switch for Portable Devices



Equivalent Circuit

SOT-23

1. GATE
2. SOURCE
3. DRAIN



MARKING: 2307

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}	± 20	
Continuous Drain Current ^{a,b}	I_D	-2.7	A
Continuous Source-Drain Current ^{a,b}	I_S	-0.91	
Power Dissipation ^{a,b}	P_D	1.1	W
Thermal Resistance from Junction to Ambient ($t \leq 5s$)	$R_{\theta JA}$	114	$^{\circ}\text{C/W}$
Operating Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55 ~ +150	



BC2307

P-Channel 30-V(D-S) MOSFET



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

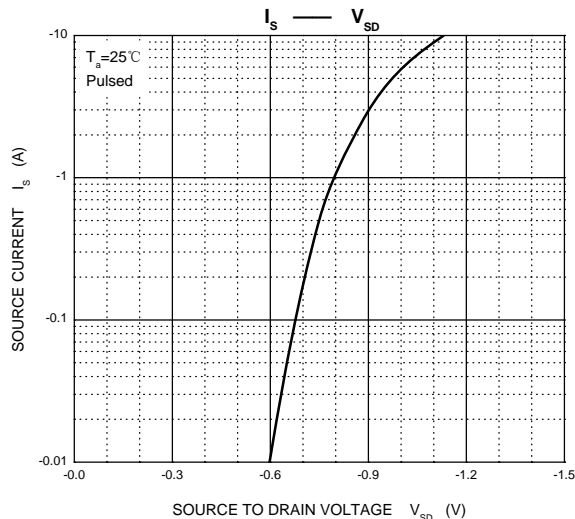
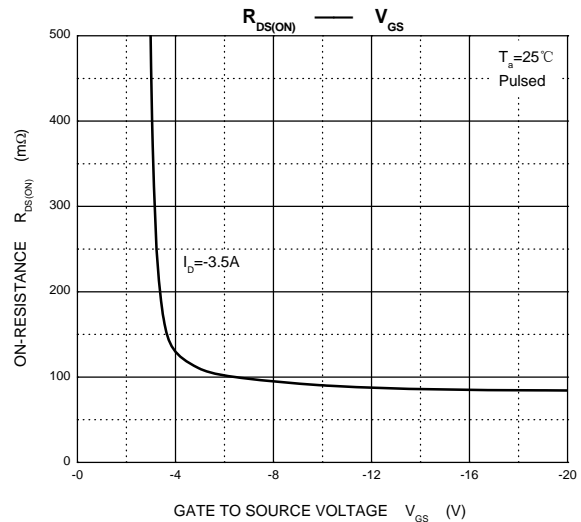
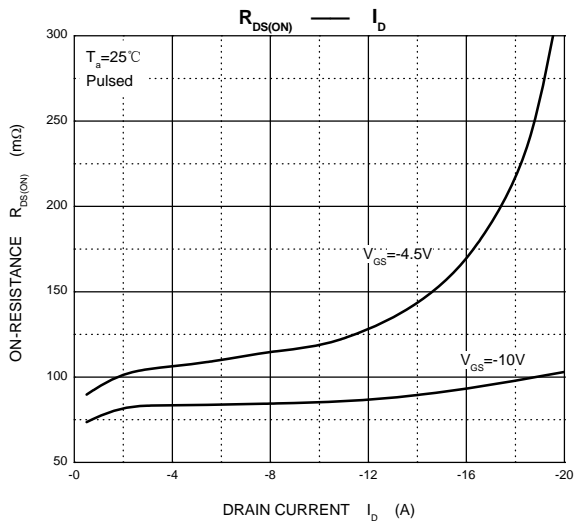
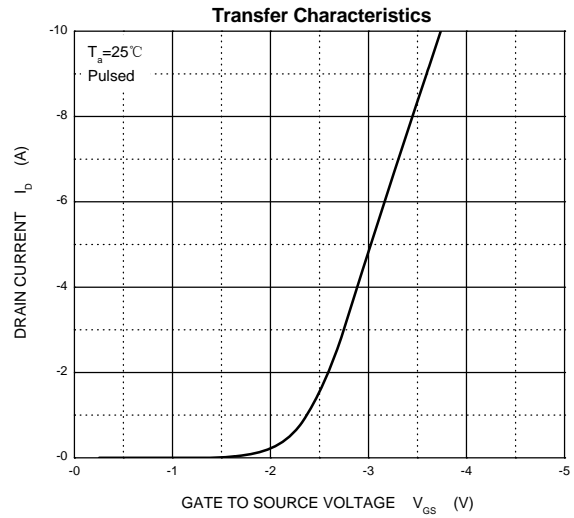
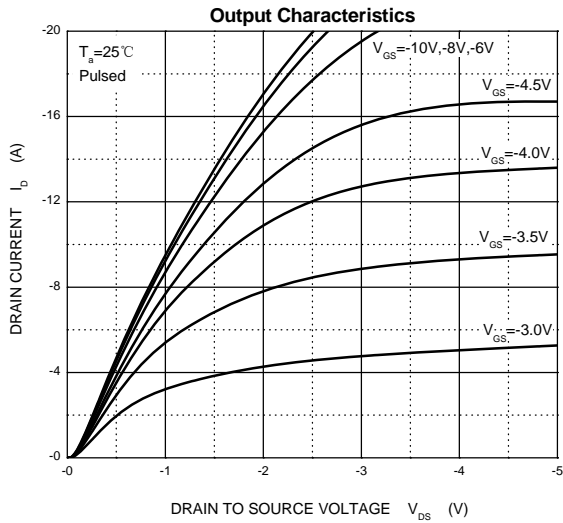
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-30			V
Gate-Source Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1		-3	
Gate-Source Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -30V, V_{GS} = 0V$			-1	μA
		$V_{DS} = -30V, V_{GS} = 0V, T_J = 55^\circ\text{C}$			-10	
Drain-Source On-State Resistance ^c	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -2.5A$		0.110	0.138	Ω
		$V_{GS} = -10V, I_D = -3.5A$		0.073	0.088	
Forward Transconductance ^c	g_{fs}	$V_{DS} = -10V, I_D = -3.5A$		7		S
Dynamic^d						
Input Capacitance	C_{iss}	$V_{DS} = -15V, V_{GS} = 0V, f = 1\text{MHz}$		340		μF
Output Capacitance	C_{oss}			67		
Reverse Transfer Capacitance	C_{rss}			51		
Total Gate Charge	Q_g	$V_{DS} = -15V, V_{GS} = -4.5V, I_D = -2.5A$		4.1	6.2	nC
Gate-Source Charge	Q_{gs}			1.3		
Gate-Drain Charge	Q_{gd}			1.8		
Gate Resistance	R_g	$f = 1\text{MHz}$		10		Ω
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -15V, R_L = 15\Omega, I_D = -1A, V_{GEN} = -4.5V, R_g = 1\Omega$		40	60	ns
Rise Time	t_r			40	60	
Turn-Off Delay Time	$t_{d(off)}$			20	40	
Fall Time	t_f			17	30	
Drain-source Body diode characteristics						
Body Diode Voltage	V_{SD}	$I_S = -0.75A, V_{GS} = 0$		-0.8	-1.2	V

Notes:

- $t = 5s$.
- Surface mounted on 1" x 1" FR4 board.
- Pulse Test : Pulse Width < 300 μs , Duty Cycle $\leq 2\%$.
- Guaranteed by design, not subject to production testing.



Typical Characteristics

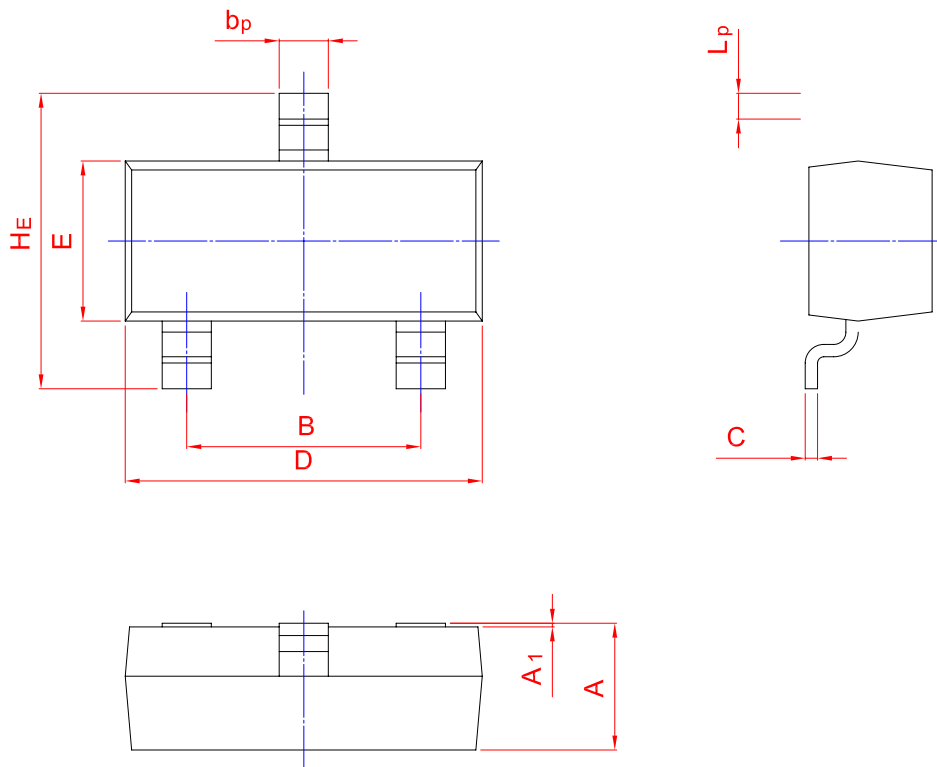
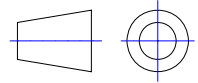




PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	b_p	C	D	E	H_E	A_1	L_p
mm	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50
	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20

Package	Reel	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)
SOT-23	3000pcs	7inch	45,000pcs	203×203×195	180,000pcs	438×438×220