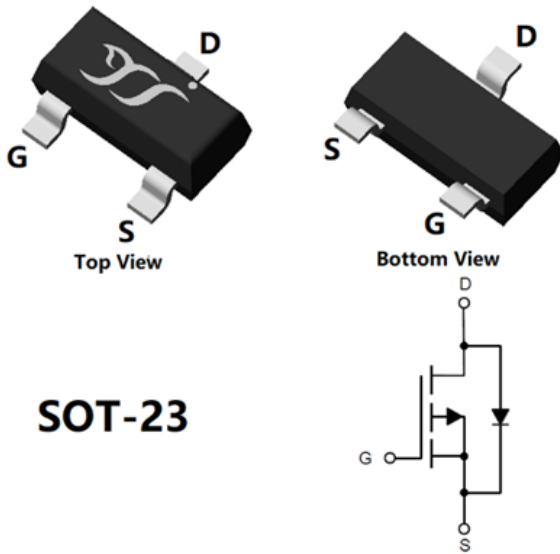


P-Channel Enhancement Mode Field Effect Transistor



SOT-23

Product Summary

- V_{DS} -60 V
- I_D -0.17 A
- $R_{DS(ON)}$ (at $V_{GS}=-10V$) <8 ohm
- $R_{DS(ON)}$ (at $V_{GS}=-4.5V$) <9.9 ohm

General Description

- Trench Power LV MOSFET technology
- Low $R_{DS(ON)}$
- Low Gate Charge
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free

Applications

- Video monitor
- Power management

■ Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Maximum	Unit
Drain-source Voltage	V_{DS}	-60	V
Gate-source Voltage	V_{GS}	± 20	V
Drain Current	I_D	$T_A=25^\circ\text{C}$ @ Steady State	-0.17
		$T_A=70^\circ\text{C}$ @ Steady State	-0.14
Pulsed Drain Current ^A	I_{DM}	1.2	A
Total Power Dissipation @ $T_A=25^\circ\text{C}$	P_D	0.35	W
Thermal Resistance Junction-to-Ambient ^B	$R_{\theta JA}$	357	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^\circ\text{C}$

■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
BSS84	F2	B84.	3000	30000	120000	7" reel



BSS84

■ Electrical Characteristics ($T_J=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=-250\mu A$	-60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-60V, V_{GS}=0V$			-1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.9	-1.4	-2.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-0.15A$		3.3	8	Ω
		$V_{GS}=-4.5V, I_D=-0.15A$		3.5	9.9	
Diode Forward Voltage	V_{SD}	$I_S=-0.17A, V_{GS}=0V$			-1.2	V
Maximum Body-Diode Continuous Current	I_S				-0.17	A
Dynamic Parameters						
Input Capacitance	C_{iss}	$V_{DS}=-30V, V_{GS}=0V, f=1\text{MHz}$		43		pF
Output Capacitance	C_{oss}			2.9		
Reverse Transfer Capacitance	C_{rss}			1.8		
Switching Parameters						
Total Gate Charge	Q_g	$V_{GS}=-10V, V_{DS}=-30V, I_D=-0.15A$		1.77		nC
Gate Source Charge	Q_{gs}			0.57		
Gate Drain Charge	Q_{gd}			0.18		
Reverse Recovery Charge	Q_{rr}	$I_F=-0.15A, di/dt=100A/\mu s$		13		
Reverse Recovery Time	t_{rr}			23		
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=-4.5V, V_{DD}=-30V, I_D=-0.15A, R_{GEN}=2.5\Omega$		8.6		ns
Turn-on Rise Time	t_r			20		
Turn-off Delay Time	$t_{D(off)}$			15		
Turn-off Fall Time	t_f			77		

A. Pulse Test: Pulse Width $\leq 10\mu s$, Duty cycle $\leq 2\%$.

B. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.



■ Typical Performance Characteristics

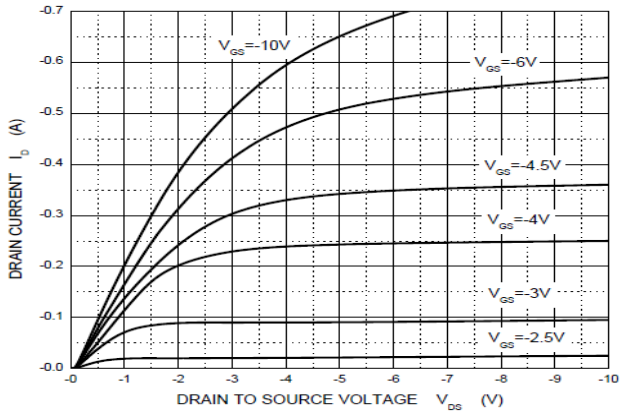


Figure1. Output Characteristics

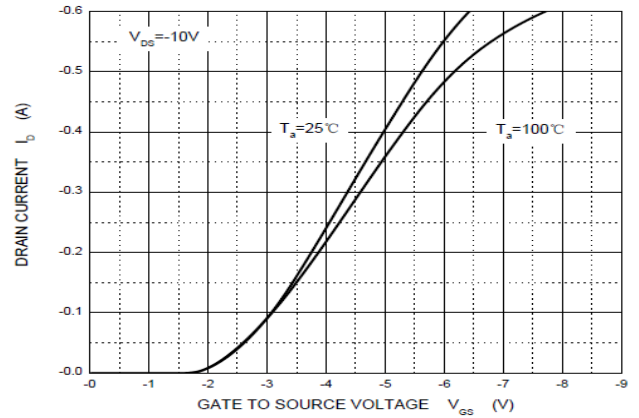


Figure2. Transfer Characteristics

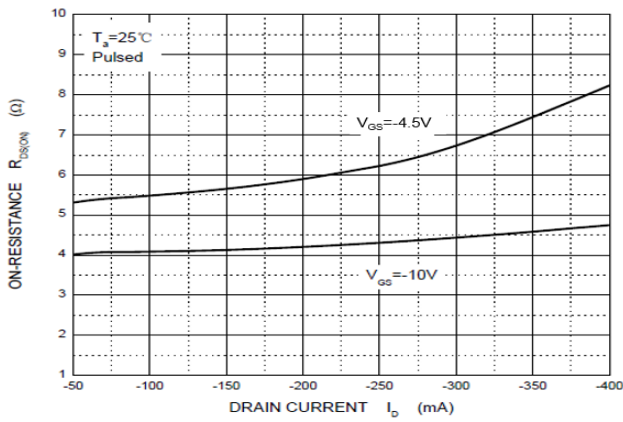


Figure3. Drain-Source on Resistance

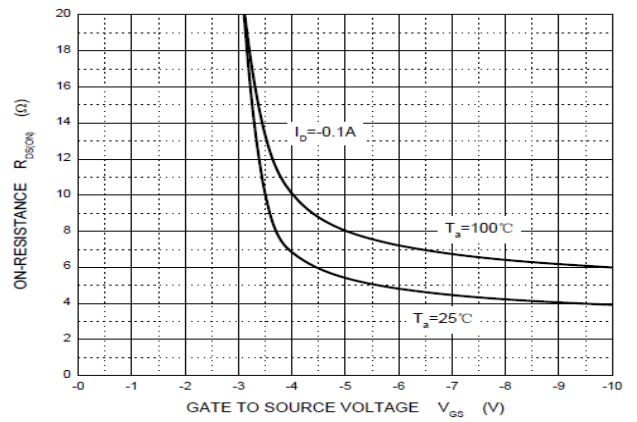


Figure4. Drain-Source on Resistance

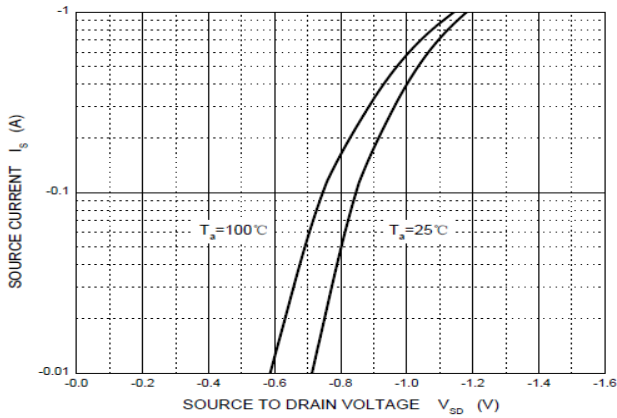


Figure5. Diode Forward Voltage vs. current

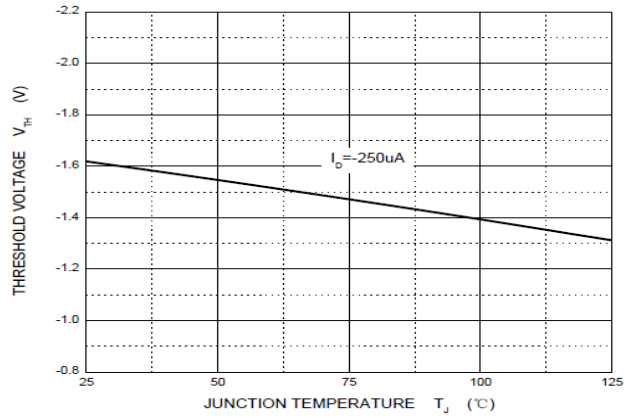


Figure6. Gate Threshold vs. Junction Temperature

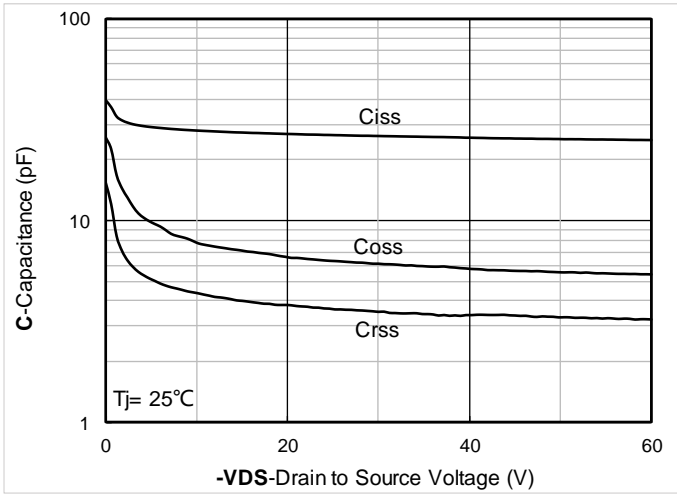


Figure7. Capacitance Characteristics

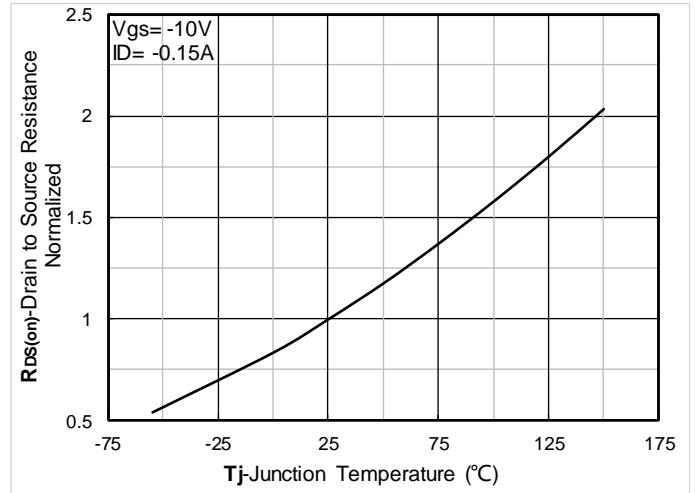
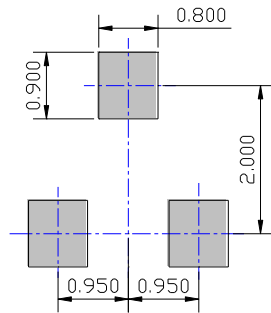
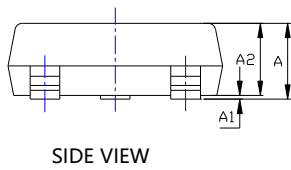
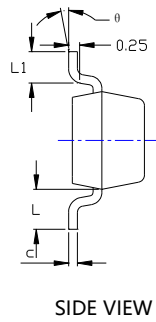
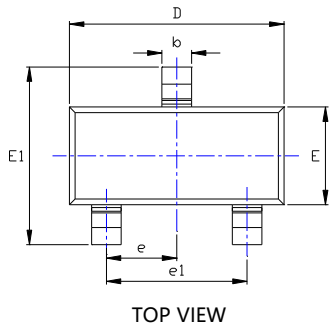


Figure8. Normalized On-Resistance



■ SOT-23 Package information



UNIT: mm

SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.045	0.900	1.150
A1	0.000	0.004	0.000	0.100
A2	0.035	0.041	0.900	1.050
b	0.012	0.020	0.300	0.500
c	0.004	0.008	0.100	0.200
D	0.110	0.118	2.800	3.000
E	0.047	0.055	1.200	1.400
E1	0.089	0.100	2.250	2.550
e	0.037TYP		0.950TYP	
e1	0.071	0.079	1.800	2.000
L	0.022REF		0.550REF	
L1	0.012	0.020	0.300	0.500
θ	0°	8°	0°	8°

NOTE:

1.PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.

2.TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.

3.THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.



BSS84

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