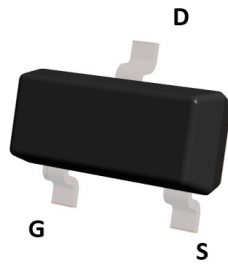
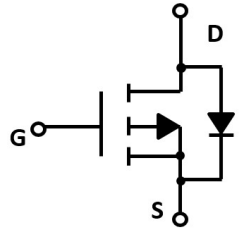
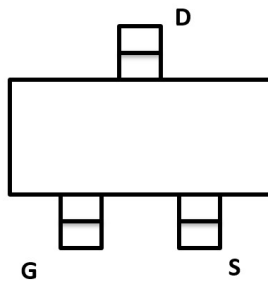


P-Channel Enhancement Mode Field Effect Transistor



Top View

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

Applications

- Video monitor
- Power management

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

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

■ 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°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =-250μA	-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} = ±20V, V _{DS} =0V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =-250μA	-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=1MHZ		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 =-0.15 A		1.77		nC
Gate Source Charge	Q _{gs}			0.57		
Gate Drain Charge	Q _{gd}			0.18		
Reverse Recovery Charge	Q _{rr}	IF=-0.15A, di/dt=100A/μs		13		ns
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} =2.5Ω		8.6		
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 ≤ 10μs, Duty cycle ≤ 2%.

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

■ Typical Performance Characteristics

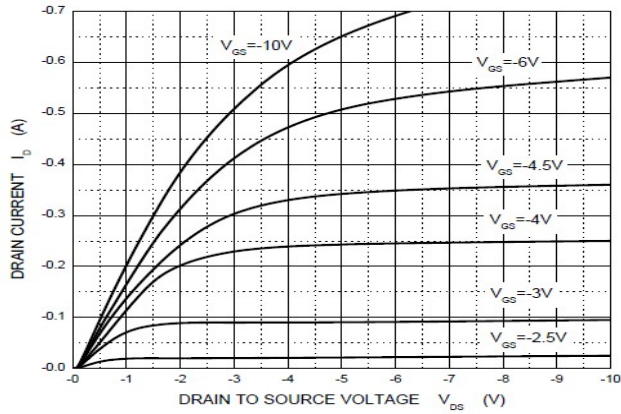


Figure1. Output Characteristics

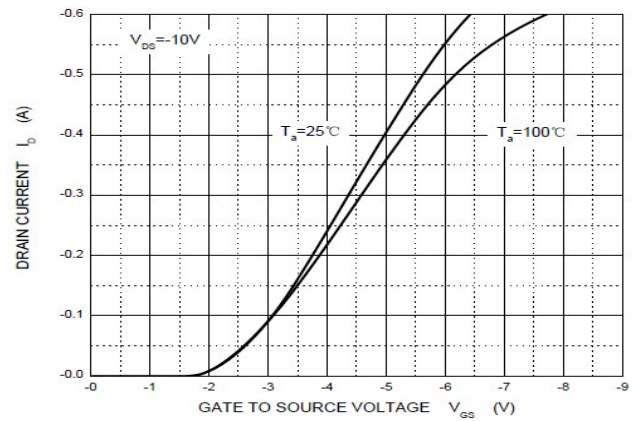


Figure2. Transfer Characteristics

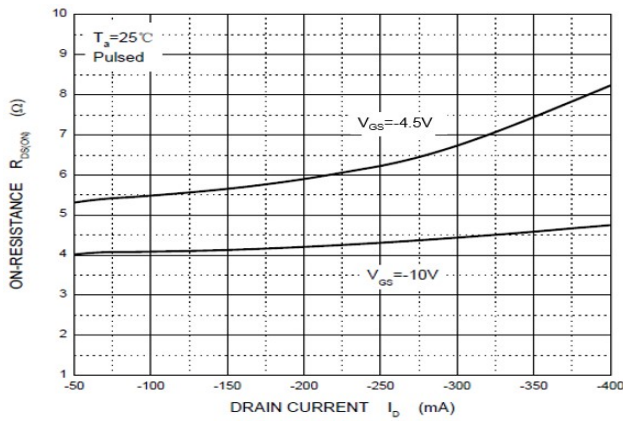


Figure3. Drain-Source on Resistance

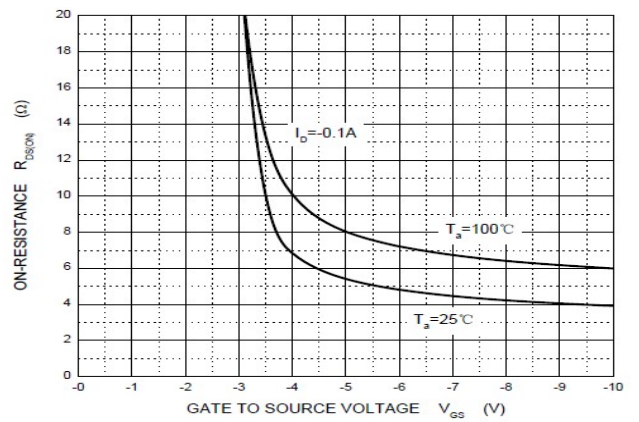


Figure4. Drain-Source on Resistance

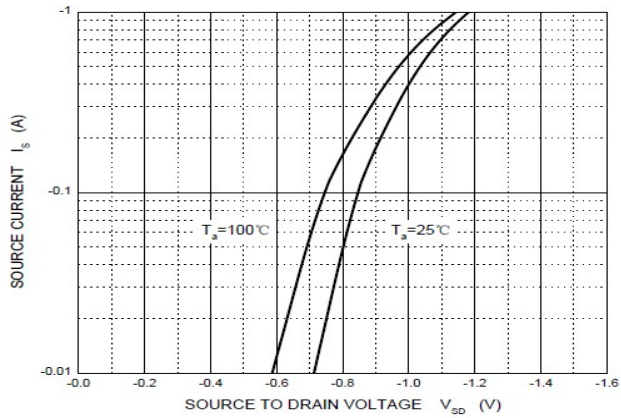


Figure5. Diode Forward Voltage vs. current

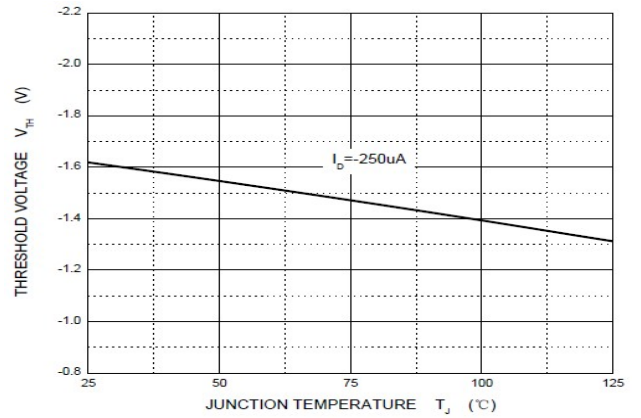
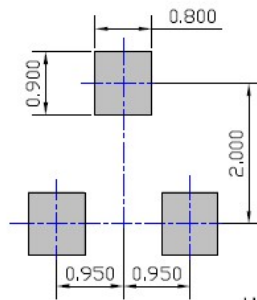
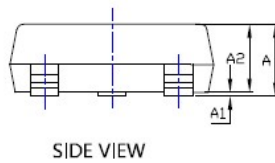
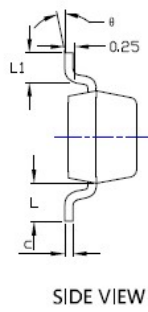
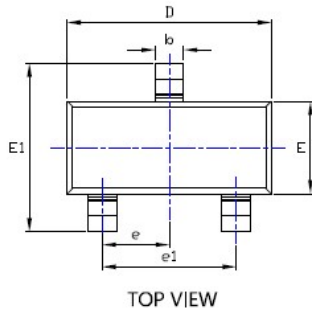


Figure6. Gate Threshold vs. Junction Temperature



■ SOT-23 Package information



UNIT: mm

SUGGESTED SOLDER PAD LAYOUT

SYMBOL	DIMENSIONS					
	INCHES			MILLimeter		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A	0.035	---	0.045	0.900	---	1.150
A1	0.000	---	0.004	0.000	---	0.100
A2	0.035	0.038	0.041	0.900	0.975	1.050
b	0.012	0.016	0.020	0.300	0.400	0.500
c	0.004	---	0.008	0.100	---	0.200
D	0.110	0.114	0.118	2.800	2.900	3.000
E	0.047	0.051	0.055	1.200	1.300	1.400
E1	0.089	0.094	0.100	2.250	2.400	2.550
e	0.037TYP			0.950TYP		
e1	0.071	0.075	0.079	1.800	1.900	2.000
L	0.022REF			0.550REF		
L1	0.012	0.016	0.200	0.300	0.400	0.500
e	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.



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