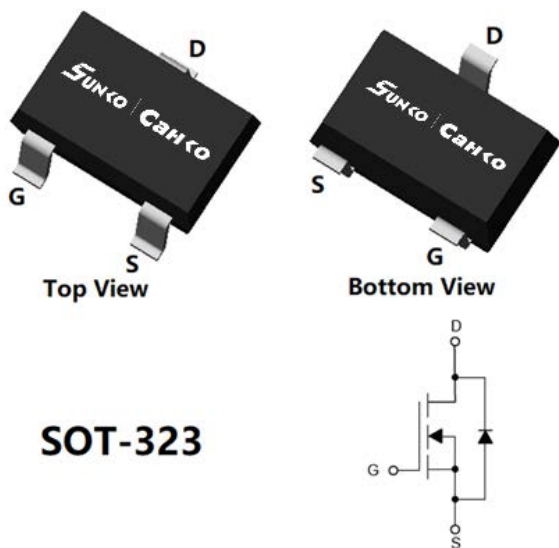


P-Channel Enhancement Mode Field Effect Transistor



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	$T_A=25^\circ\text{C}$ @ Steady State	I_D	-0.17	A
	$T_A=70^\circ\text{C}$ @ Steady State		-0.14	
Pulsed Drain Current ^A		I_{DM}	-0.68	A
Total Power Dissipation @ $T_A=25^\circ\text{C}$		P_D	0.15	W
Thermal Resistance Junction-to-Ambient ^B		$R_{\theta JA}$	833	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range		T_J, T_{STG}	-55~+150	$^\circ\text{C}$

■ Ordering Information

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
BSS84W	F2	B84.	3000	30000	120000	7" reel

■ 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≤10us, Duty cycle ≤2%.

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

■ Typical Performance Characteristics

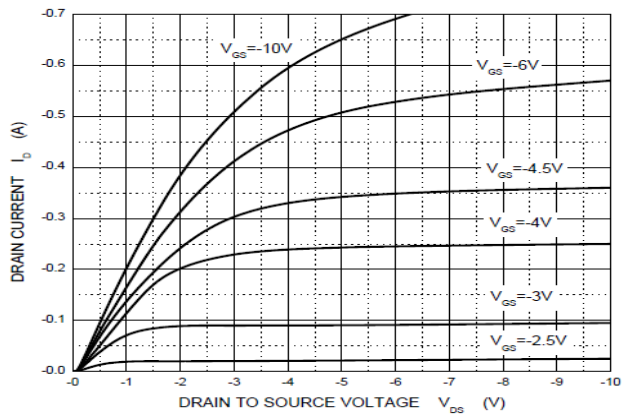


Figure1. Output Characteristics

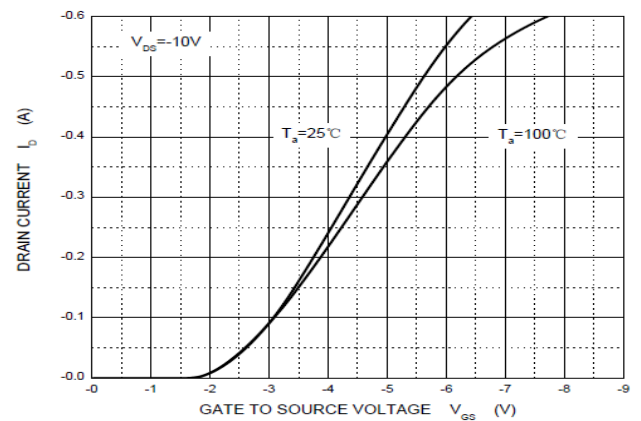


Figure2. Transfer Characteristics

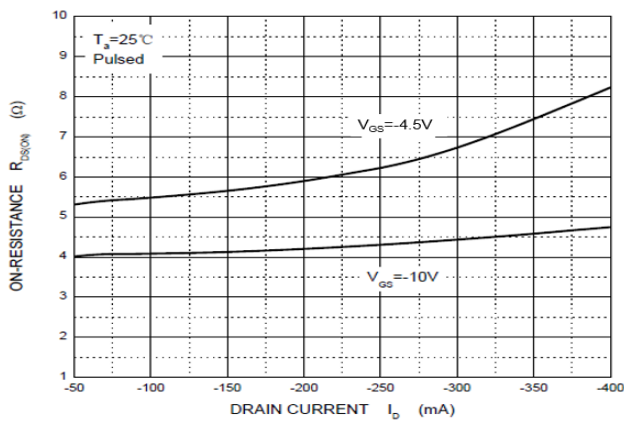


Figure3. Drain-Source on Resistance

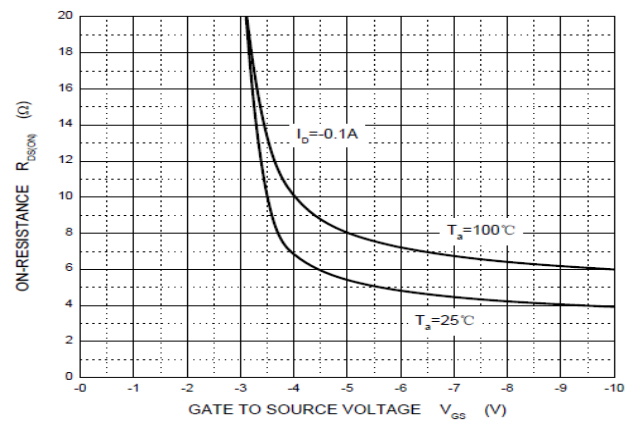


Figure4. Drain-Source on Resistance

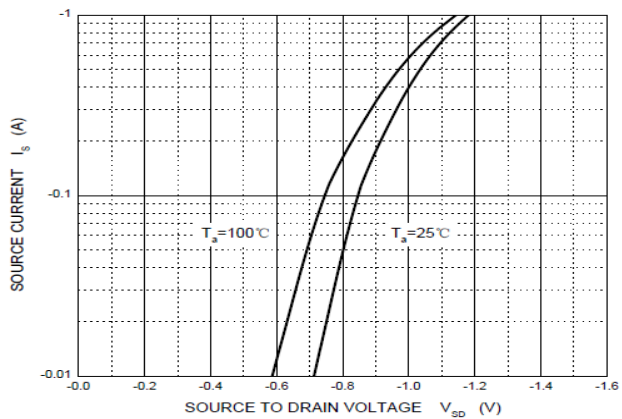


Figure5. Diode Forward Voltage vs. current

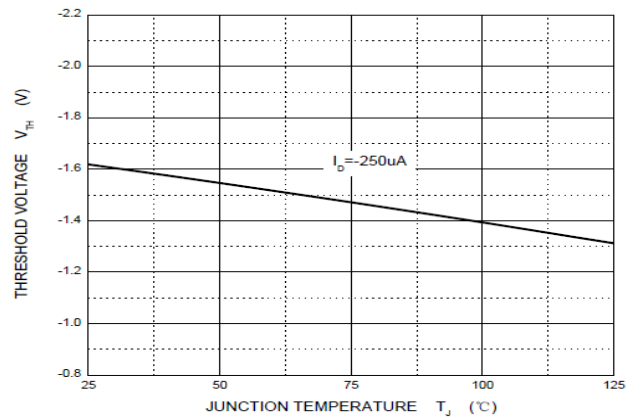


Figure6. Gate Threshold vs. Junction Temperature

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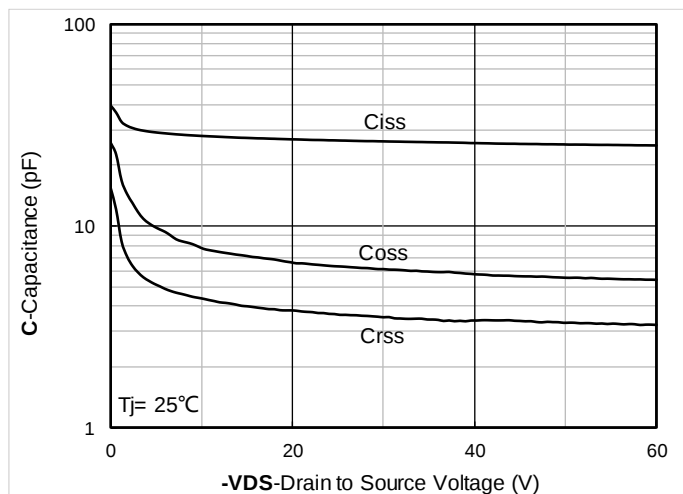


Figure7. Capacitance Characteristics

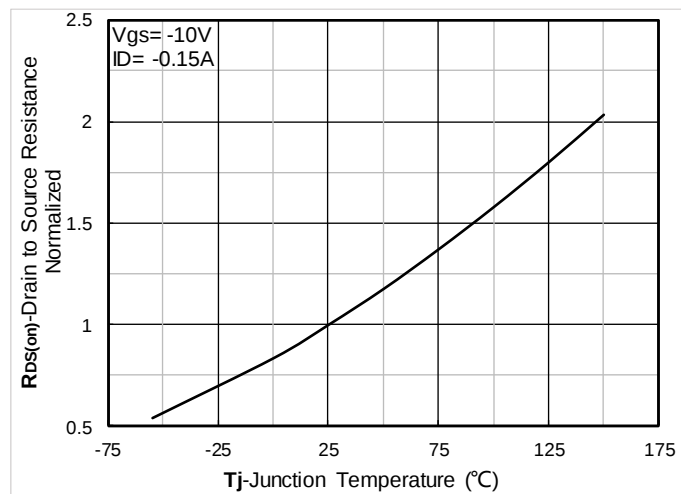
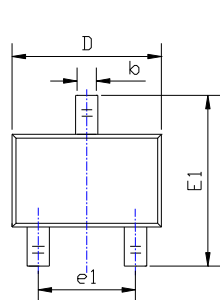
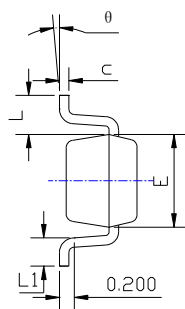


Figure8. Normalized On-Resistance

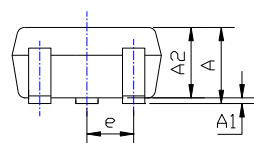
■ SOT-323 Package Information



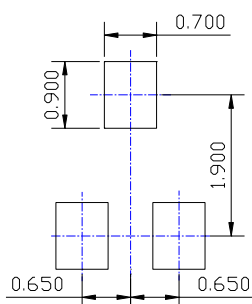
TOP VIEW



SIDE VIEW



SIDE VIEW



UNIT: mm

SUGGESTED SOLDER PAD LAYOUT

SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.043	0.900	1.100
A1	0.000	0.004	0.000	0.100
A2	0.035	0.039	0.900	1.000
b	0.006	0.016	0.150	0.400
c	0.004	0.010	0.100	0.250
D	0.071	0.087	1.800	2.200
E	0.045	0.053	1.150	1.350
E1	0.085	0.096	2.150	2.450
e	0.026 TYP		0.650 TYP	
e1	0.047	0.055	1.200	1.400
L	0.021 REF		0.525 REF	
L1	0.010	0.018	0.260	0.460
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.

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