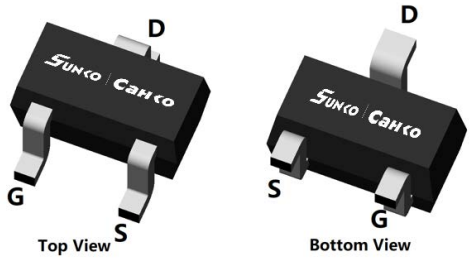
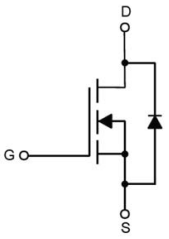
P-channel enhanced field-effect transistor



SOT-523



Product Overview

- V_{DS} -60 V
- I_D -0.26 A
- $R_{DS(ON)}$(at V_{GS}=-10V) ＜3 Ω
- $R_{DS(ON)}$(at V_{GS}=-4.5V) ＜3.5 Ω
- Gate-Source ESD Rating Up to 2KV (HBM)

General comments

• Operate under low logic electrical drive
Low RDS P channel switch (on)
Oxidized resin meets UL 94 V-0 flammability rating
• Humidity sensitivity 1
• Halogen free

application

• Power management
• Portable devices

■ Absolute maximum value (Ta=25 ° C, unless otherwise specified)

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	-60	V
Gate-source Voltage		V_{GS}	±20	V
Drain Current	T_A=25℃	I_D	-0.26	A
	T_A=100℃		-0.16	
Pulsed Drain Current [A]		I_{DM}	-1.2	A
Total Power Dissipation [B]	T_A=25℃	P_D	0.27	W
	T_A=100℃		0.1	
Junction and Storage Temperature Range		T_J ,T_{STG}	-55～+150	℃

■Термосопротивление

Parameter		Symbol	Typ	Max	Units
Thermal Resistance Junction-to-Ambient [C]	Steady-State	$R_{\theta JA}$	370	460	℃/W

■ Информация о заказе (пример)

PREFERED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
BSS84KEJ	F2	84K	3000	30000	120000	7“ reel

■ Electrical characteristics (TJ=25 ° C, unless otherwise specified)

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
		V_{DS}=-60V, V_{GS}=0V, Tj=150℃	-	-	-100	
Gate-Body Leakage Current	I_{GSS}	V_{GS}= ±20V, V_{DS}=0V	-	-	±1 0	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}= V_{GS}, I_D=-250μA	-1	-1.5	-2	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=-10V, I_D=-0.26A	-	2.2	3	Ω
		V_{GS}=-4.5V, I_D=-0.1A	-	2.5	3.5	
Diode Forward Voltage	V_{SD}	I_S=-0.26A, V_{GS}=0V	-	-0.9	-1.3	V
Gate resistance	R_G	f=1MHz, Open drain	-	700	-	Ω
Maximum Body-Diode Continuous Current	I_S		-	-	-0.26	A
Dynamic Parameters						
Input Capacitance	C_{iss}	V_{DS}=-30V, V_{GS}=0V, f=1MHz	-	35	-	pF
Output Capacitance	C_{oss}		-	6	-	
Reverse Transfer Capacitance	C_{rss}		-	3	-	
Switching Parameters						
Total Gate Charge	Q_g	V_{GS}=-10V, V_{DS}=-30V, I_D=-1A	-	1.7	-	nC
Gate-Source Charge	Q_{gs}		-	0.6	-	
Gate-Drain Charge	Q_{gd}		-	0.2	-	
Reverse Recovery Charge	Q_{rr}	I_F=-1A, di/dt=100A/us	-	10	-	nC
Reverse Recovery Time	t_{rr}		-	18	-	ns
Turn-on Delay Time	$t_{D(on)}$	V_{GS}=-10V, V_{DD}=-30V, ID=-1A R_{GEN}=2.3Ω	-	6	-	ns
Turn-on Rise Time	t_r		-	21	-	
Turn-off Delay Time	$t_{D(off)}$		-	31	-	
Turn-off fall Time	t_f		-	32	-	

A. International cooperation Repeated rating; The pulse width is limited by the maximum transition temperature.
b. PD uses crust and environmental thermal resistance based on the highest transition temperature.
c. Measure the starting value of Cr Teta Ja using a 2-ounce device installed on a 1-inch FR-4

-Board. Copper, Ta=25 ° C in static air. The maximum allowable transition temperature is 150 ° C. The value in any given application depends on the specific circuit board designuser

■Typical electric heating characteristics

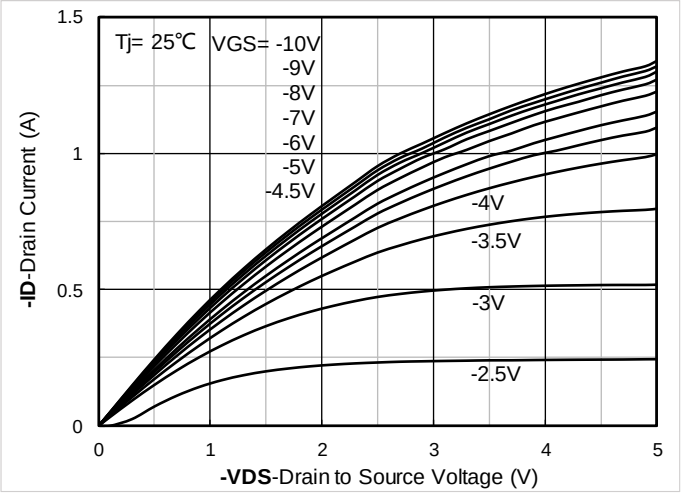


Figure 1 Output attributes

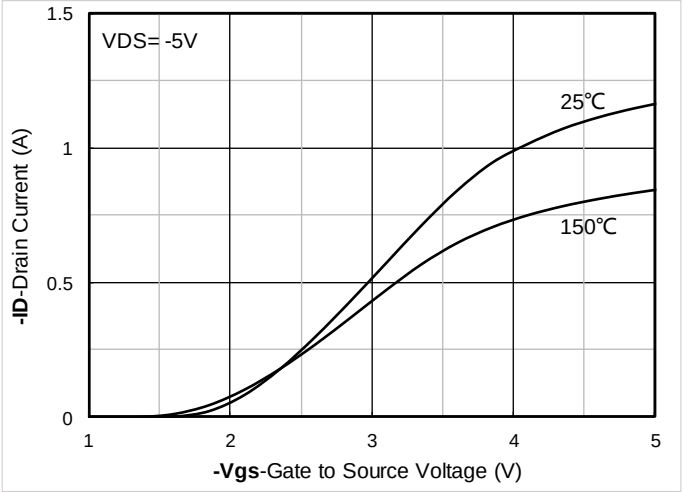


Figure 2: Transmission Properties

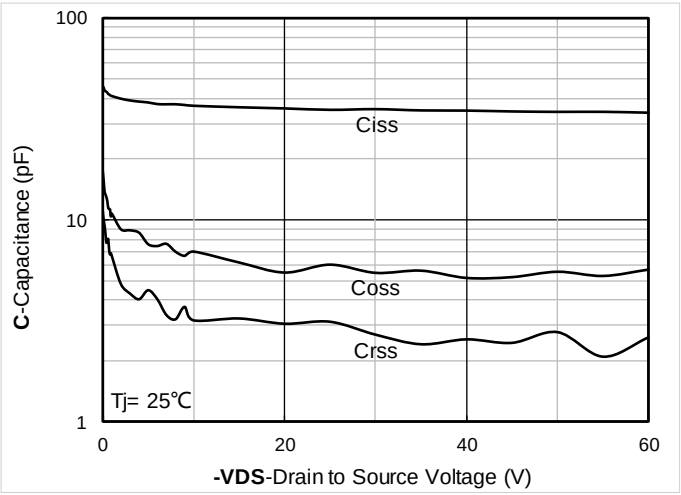


Figure 2: Movie

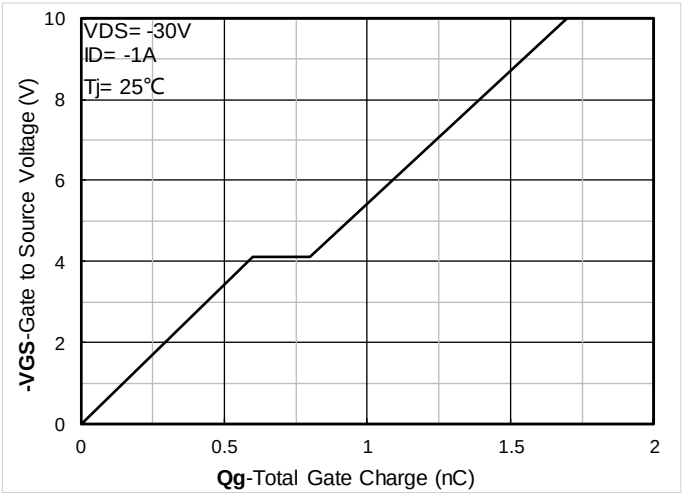


Figure 4 charge

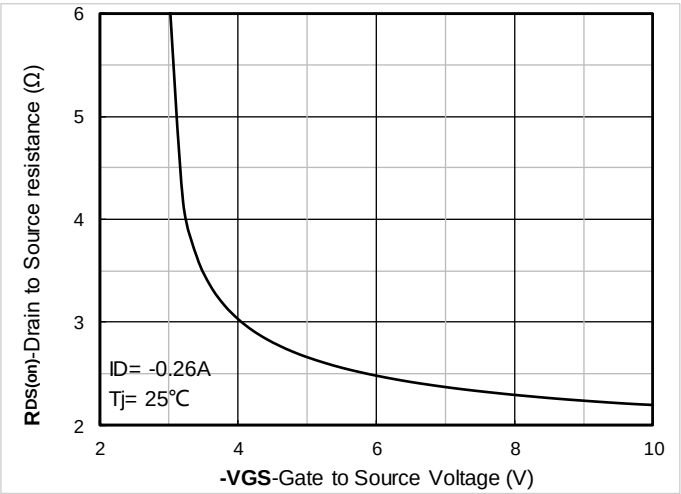


Figure 5 Resistance relationship Grating source voltage

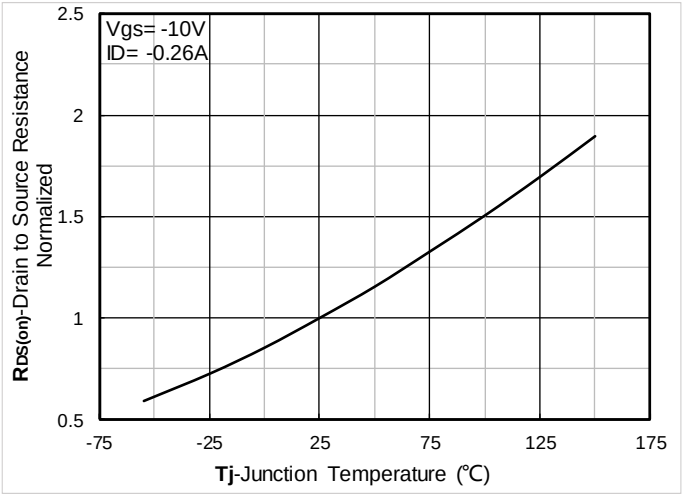


Figure 6 Standardization of resistance

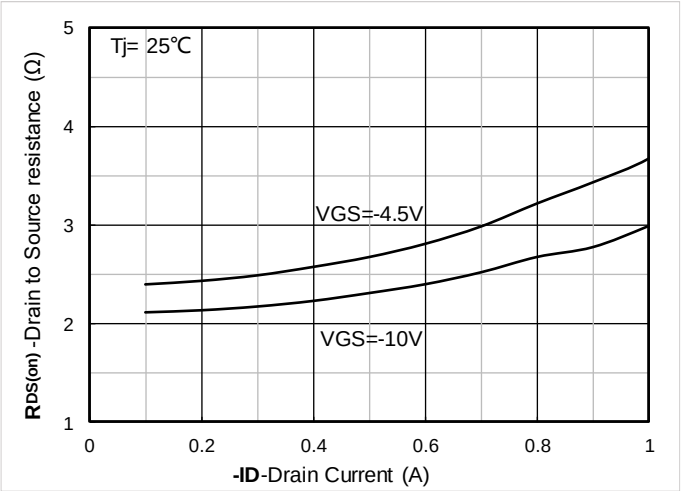


Figure 7 RDS (open) vs leakage current

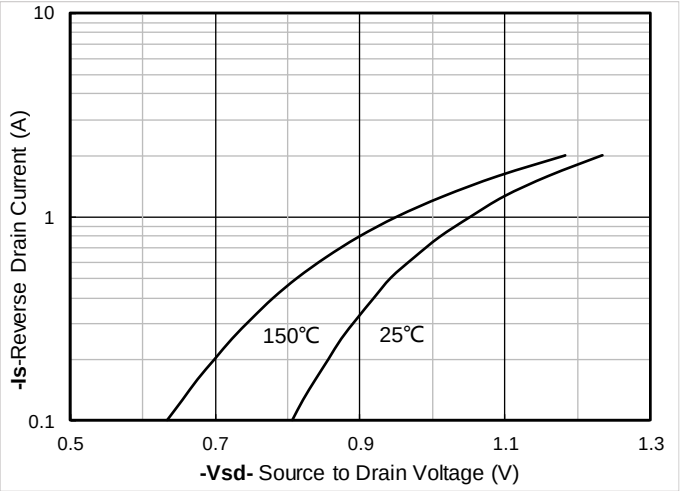


Figure 8 Reverse diode positive characteristic

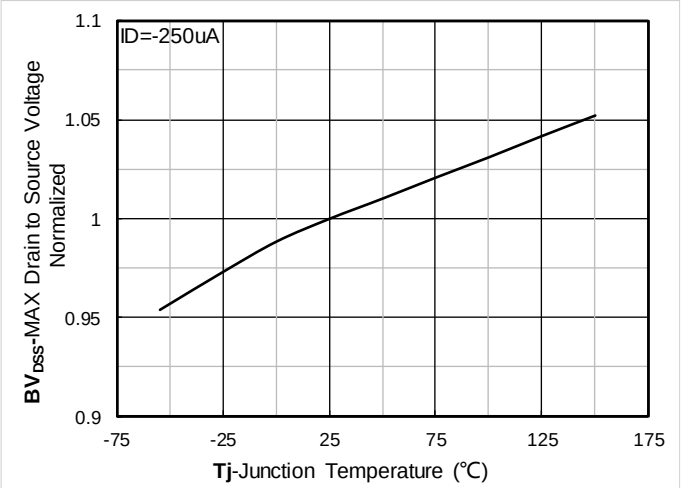


Figure 9 Standardized breakdown voltage

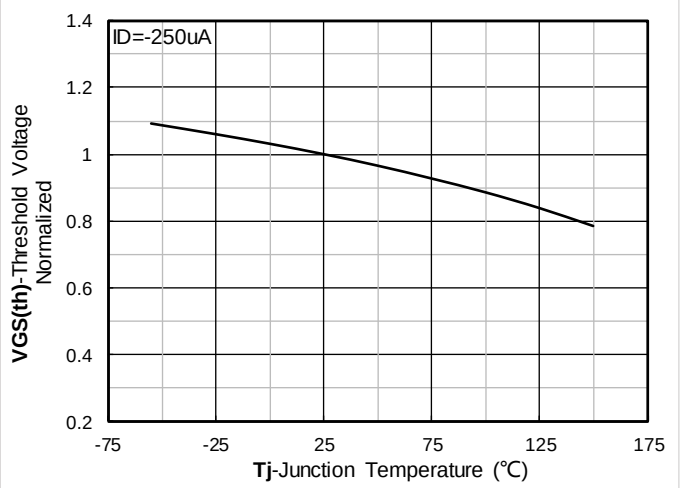


Figure 10 Standardized threshold voltage

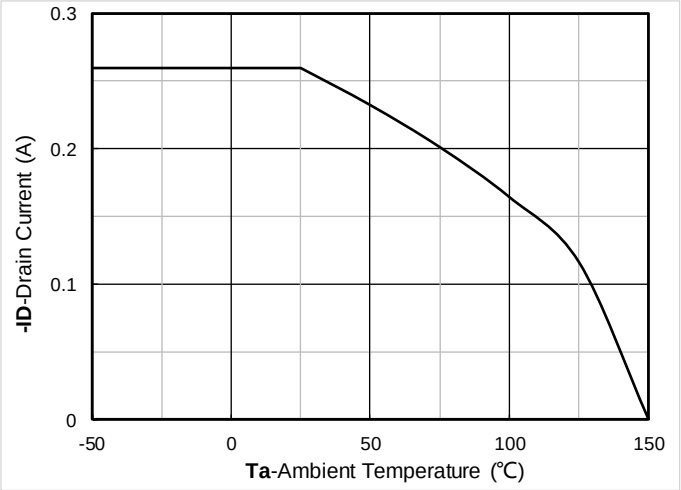


Figure 11 Current scattering

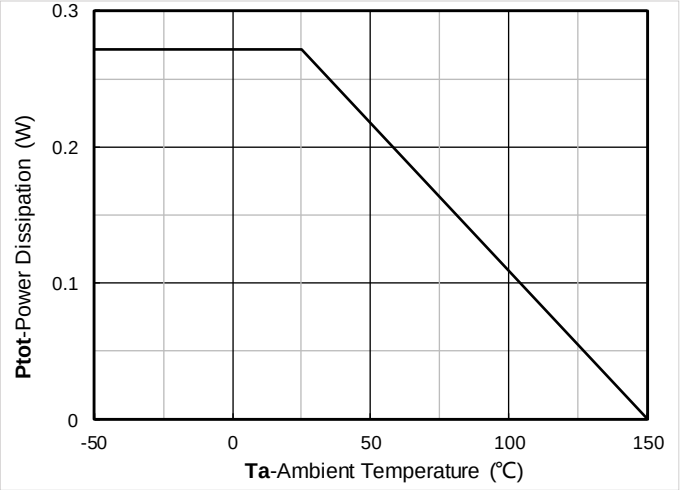


Figure 12 energy consumption

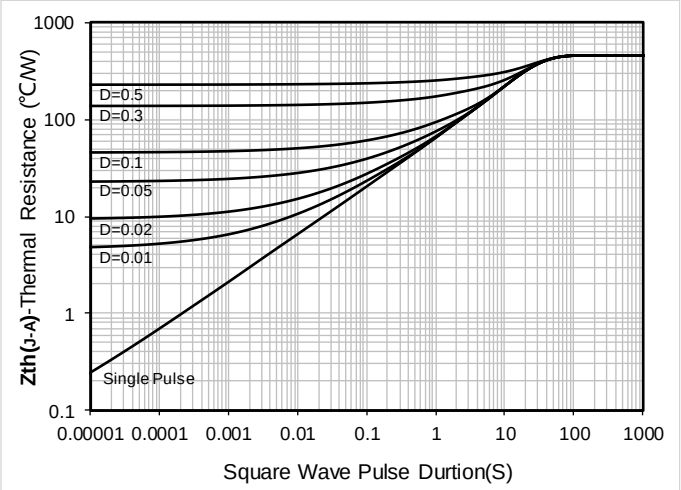


Figure 13. Maximum Transient Thermal Impedance

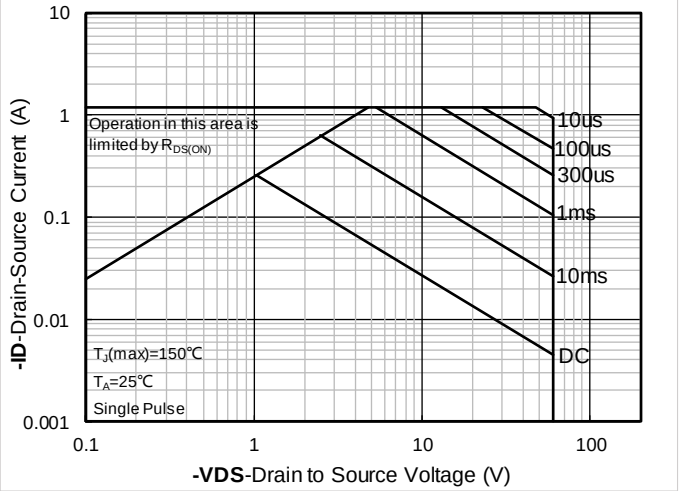
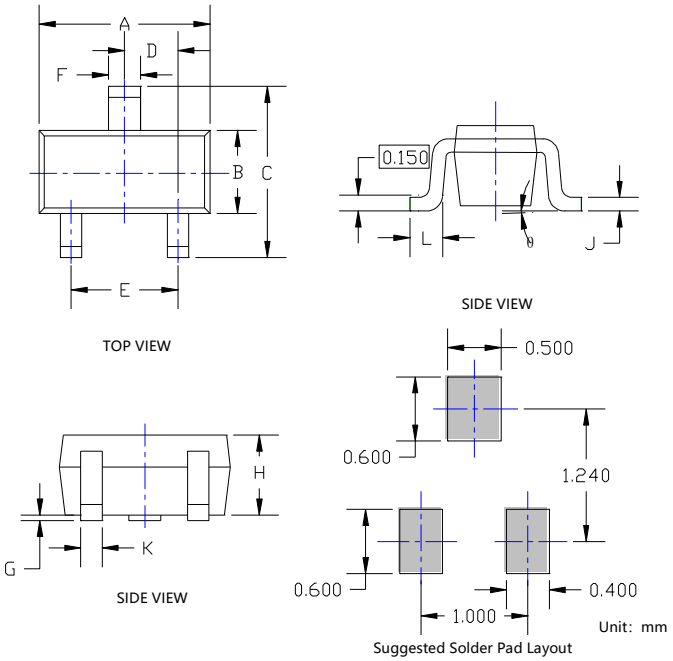


Figure 14. Safe Operation Area

■ SOT-523 Package information



DIMENSIONS				
SYMBOL	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.059	0.067	1.500	1.700
B	0.030	0.033	0.750	0.850
C	0.057	0.069	1.450	1.750
D	0.020TYP		0.500TYP	
E	0.035	0.043	0.900	1.100
F	0.010	0.018	0.250	0.450
G	0.000	0.004	0.000	0.100
H	0.024	0.031	0.600	0.800
J	0.004	0.008	0.100	0.200
K	0.006	0.014	0.150	0.350
L	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.

Disclaimers

The information provided in this document is for reference only. The limited liability company has the right to modify the product specifications provided in this document without prior notice to improve reliability, functionality, design, or other aspects.

The products listed here are designed for conventional electronic devices or installations, rather than devices or installations that require high reliability (such as medical equipment, transportation equipment, aerospace equipment, nuclear reactor controllers, fuel controllers, and other safety devices). SC or its representatives are not responsible for any damages caused by improper use in sales.

This publication replaces all previously provided materials. For more information, please visit our website at www.rusiansunco.com or consult the nearest SC sales office for further assistance.