



SSC8027GS8

P-Channel Small Switching MOSFET

➤ Features

V_{DS}	V_{GS}	$R_{DS(ON)}$ Typ.	I_D
-20V	$\pm 12V$	105m Ω @-4.5V	-2.5A
		130m Ω @-2.5V	

➤ Description

This device is an P-Channel enhancement mode MOSFET, with low on-resistance, fast switching speed and low threshold voltage, it is ideal for portable equipment.

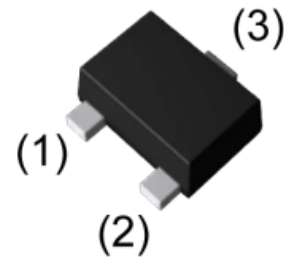
➤ Applications

- Direct Logic-Level Interface: TTL/CMOS
- Drivers: Relays, Solenoids, Lamps, Hammers
- Display, Memories, Transistors, etc.
- Battery Operated System
- Solid-State Relays

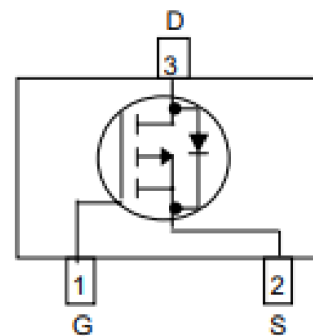
➤ Ordering Information

Device	Package	Shipping
SSC8027GS8	SOT-523	3000/Reel

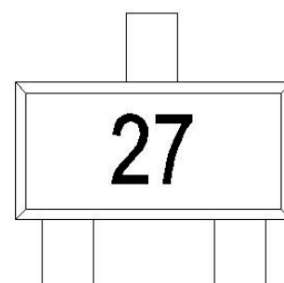
➤ Pin configuration



SOT-523



Pin Configuration (Top View)



Marking



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

Symbol	Parameter	Ratings	Unit
V_{DSS}	Drain-to-Source Voltage	-20	V
V_{GSS}	Gate-to-Source Voltage	± 12	V
I_{D}	Continuous Drain Current ^a	-2.5	A
I_{DM}	Pulsed Drain Current ^b	-10	A
P_{D}	Power Dissipation ^c	0.7	W
T_{J}	Operation junction temperature	-55~150	$^{\circ}\text{C}$
T_{STG}	Storage temperature range	-55~150	$^{\circ}\text{C}$

➤ **Thermal Resistance Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)**

Symbol	Parameter	Maximum	Unit
$R_{\theta\text{JA}}$	Junction-to-Ambient Thermal Resistance ^a	172	$^{\circ}\text{C}/\text{W}$

Note:

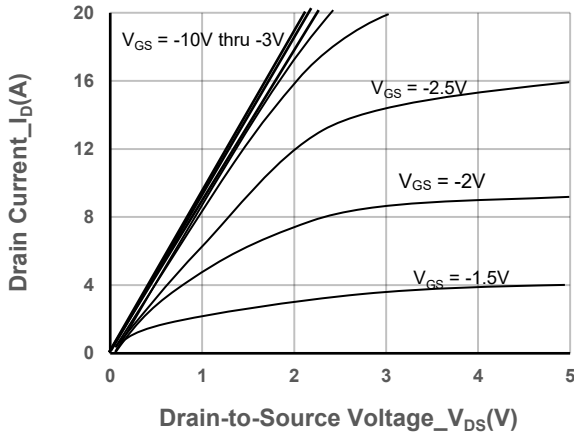
- The value of $R_{\theta\text{JA}}$ is measured with the device mounted on 1 in² FR-4 board with 2oz.copper, in a still air environment with $T_A=25^{\circ}\text{C}$. The value in any given application depends on the user is specific board design. The power dissipation is based on the $t \leq 10\text{s}$ thermal resistance rating.
- Repetitive rating, pulse width limited by junction temperature.
- The power dissipation P_{D} is based on $T_{\text{J(MAX)}}=150^{\circ}\text{C}$, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.

**➤ Electrical Characteristics (T_A=25°C unless otherwise noted)**

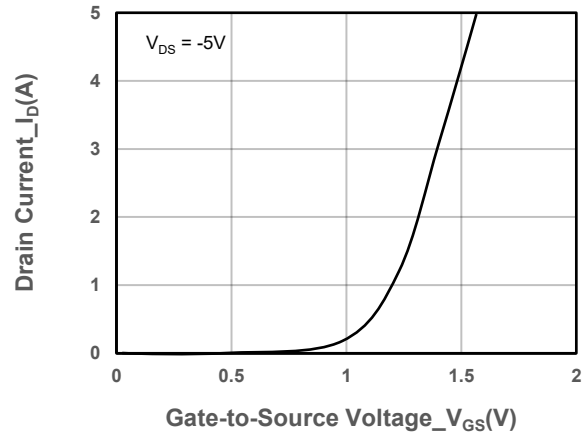
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-20			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250uA	-0.4	-0.7	-1	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = -4.5V, I _D = -0.45A		105	150	mΩ
		V _{GS} = -2.5V, I _D = -0.35A		130	230	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -20V, V _{GS} = 0V			-1	μA
Gate-Source Leak Current	I _{GSS}	V _{GS} = ±12V, V _{DS} = 0V			±100	nA
Forward Voltage	V _{SD}	V _{GS} = 0V, I _S = -0.5A		-0.7	-1.3	V
Input Capacitance	C _{ISS}	V _{DS} = -10V, V _{GS} = 0V, f = 1MHz		370		pF
Output Capacitance	C _{OSS}			161		
Reverse Transfer Capacitance	C _{RSS}			27		
Turn-on Delay Time	T _{D(ON)}	V _{GS} = -4.5V, R _L = 4Ω V _{DS} = -10V, R _G = 2Ω		9.8		ns
Rise Time	T _r			24		
Turn-off Delay Time	T _{D(OFF)}			18		
Fall Time	T _f			7.7		
Total Gate Charge	Q _G	V _{GS} = -4.5V, V _{DS} = -10V, I _D = -0.2A		4.1		nC
Gate to Source Charge	Q _{GS}			0.4		
Gate to Drain Charge	Q _{GD}			0.5		



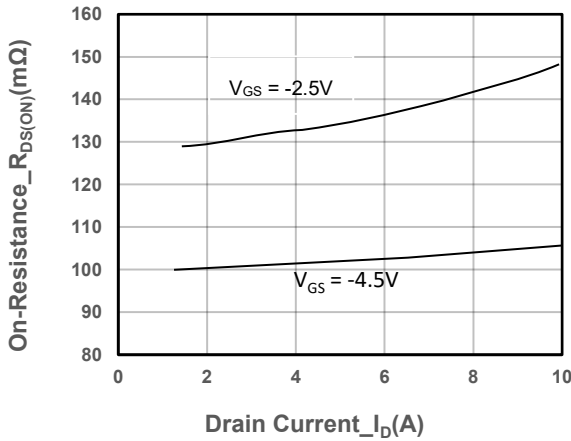
➤ Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)



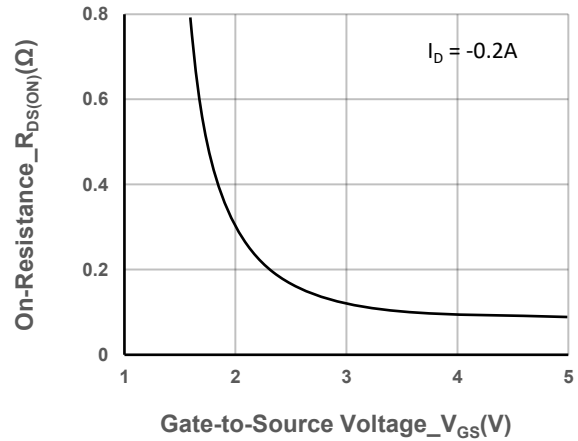
Output Characteristics



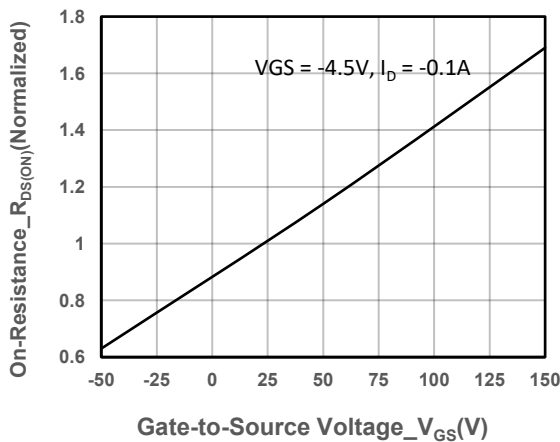
Transfer Characteristics



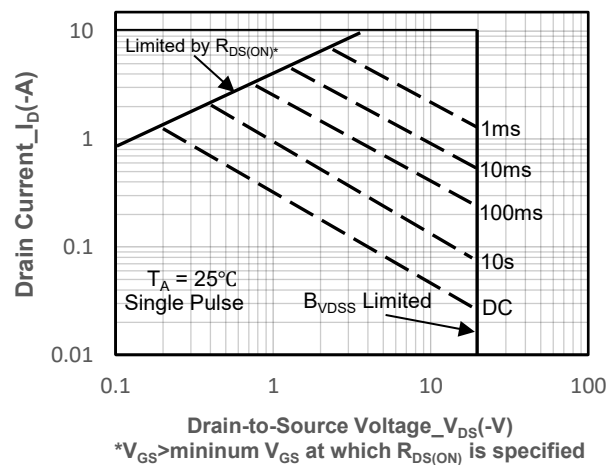
On-Resistance vs. Drain Current and Gate Voltage



On-Resistance vs. Gate-to-Source Voltage



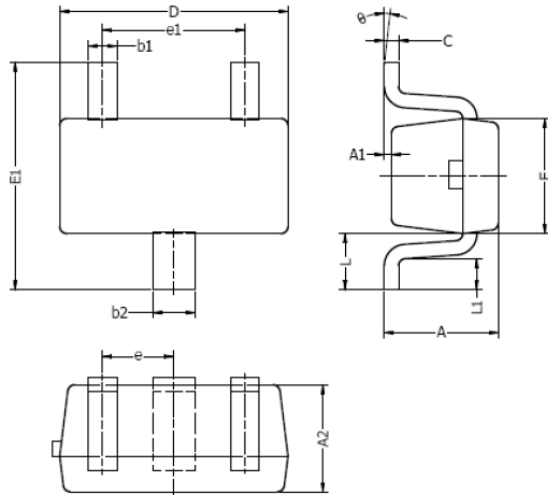
On-Resistance vs. Junction Temperature



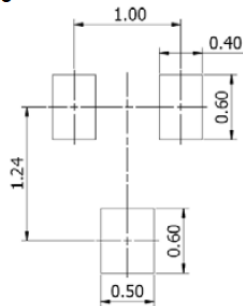
Safe Operating Area vs. Junction-to-Ambient

➤ Package Information

SOT-523



Typical Soldering Pattern:



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.70	0.90	0.028	0.035
A1	0.00	0.10	0.000	0.004
A2	0.70	0.80	0.028	0.031
b1	0.15	0.25	0.006	0.010
b2	0.25	0.35	0.010	0.014
c	0.10	0.20	0.004	0.008
D	1.50	1.70	0.059	0.067
E	0.70	0.90	0.028	0.035
E1	1.45	1.75	0.057	0.069
e	0.50 TYP.		0.020 TYP.	
e1	0.90	1.10	0.035	0.043
L	0.40 REF.		0.016 REF.	
L1	0.10	0.30	0.004	0.012
θ	0°	8°	0°	8°

NOTES:

1. Above package outline conforms to JEITA EAIJ ED-7500A SC-75A.
2. Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.



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