P-Channel -50V (D-S) Power MOSFET

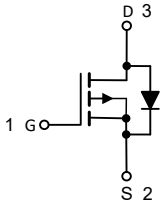
Features

- 100% Avalanche Tested
- Halogen Free, Pb-Free
- RoHS Compliant

SOT-23

Applications

- Relay driver
- Switching circuits
- High-side load switch
- High-speed line driver



Absolute Maximum Ratings (T_A=25°C unless otherwise noted)				
Parameter		**Symbol**	**Value**	**Unit**
Drain Source Voltage		V_{DS}	-50	V
Gate Source Voltage		V_{GS}	±20	V
Drain Current, Continuous	T_C=25°C	I_D	-130	mA
	T_C=100°C		-100	
Drain Current, Pulsed *(Note 1)*		I_{DM}	-520	A
Power Dissipation	T_C=25°C	P_D	230	mW
Operating Junction/ Storage Temperature Range		T_J/ T_{STG}	-55 to +150	°C

Note 1: Single pulse; $t_p \leq 1us$.

Thermal Characteristics			
Parameter	**Symbol**	**Max**	**Unit**
Thermal Resistance Junction to Ambient *(Note 2)*	R_{thJA}	540	°C/W

Note 2: Device mounted on 1 square inch FR4 PCB board, with 2oz single-sided copper, in a 25°C still air environment.

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	-50	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-50V, V_{GS}=0V	--	--	-1	uA
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS}=V_{GS}, I_{DS}=-1mA	-0.8	--	-2	V
Gate Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	--	--	±10	nA
Drain-Source On-state Resistance *(Note 3)*	$R_{DS(on)}$	V_{GS}=-10V, I_D=-130mA	--	2.1	7	Ω
Turn-on Delay Time	$t_{d(on)}$	I_D=-2.5A, V_{DD}=-15V, R_L=50Ω	--	3.1	--	ns
Turn-on Rise Time	t_r		--	1.3	--	
Turn-off Delay Time	$t_{d(off)}$		--	18	--	
Turn-off Fall Time	t_f		--	7.5	--	
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-30V, f=1MHz	--	30	--	pF
Output Capacitance	C_{oss}		--	6	--	
Reverse Transfer Capacitance	C_{rss}		--	2.5	--	

Reverse Diode Characteristics (T_A =25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Forward Current, Continuous	I_{SD}	T_C=25°C	--	--	-130	mA
Diode Forward Voltage *(Note 3)*	V_{SD}	I_F=-130mA, V_{GS}=0V	--	--	1.3	V

Note 3: Pulse test; pulse width ≤ 380μs, duty cycle ≤ 1%.

Package Outline Dimensions (Unit: millimeters)

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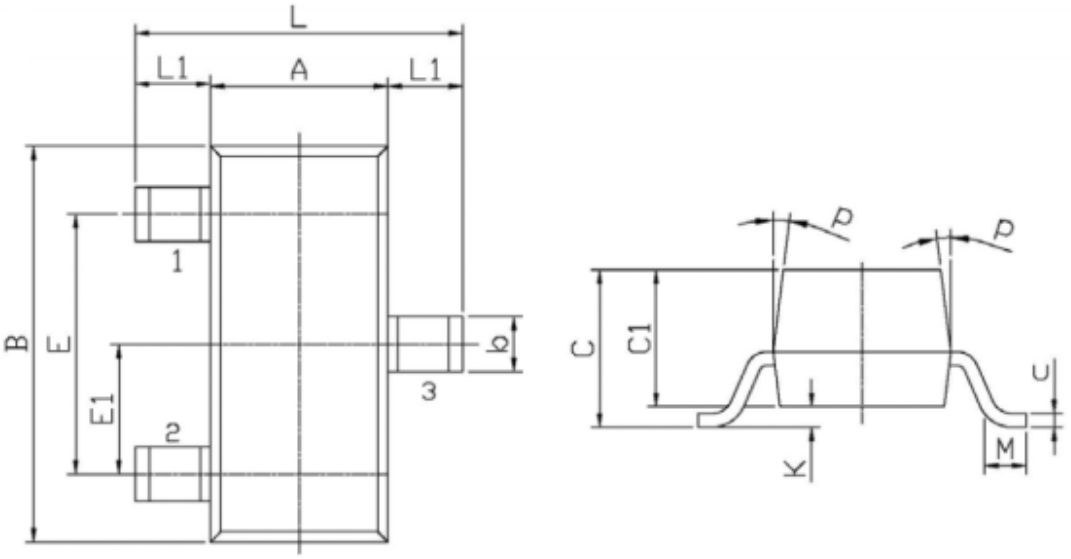
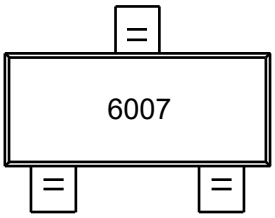


Symbol	Dimensions in Millimeter		Symbol	Dimensions in Millimeter	
	Min	Max		Min	Max
L	2.2	2.7	C	1.30 Max	
L1	0.45	0.65	C1	0.90	1.20
A	1.15	1.50	c	0.05	0.20
B	2.70	3.10	K	0	0.10
E	1.70	2.10	M	0.20 Min	
E1	0.85	1.05	P	7°	
b	0.35	0.55			

Marking Outline



Part Name: SSF6007

1. P/N Mark: 6007

Revision History

Version	Date	Major Changes
Rev.A	2025.08.04	Official Release

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