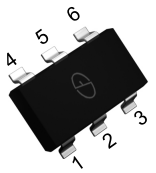
P-Channel -20V (D-S) Power MOSFET

Features

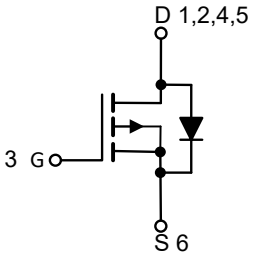
- 100% Avalanche Tested
- RoHS Compliant, Halogen Free, Pb-Free
- Fast switching and reverse body recovery
- MSL 1



SOT-23-6

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}	-20	V
Gate Source Voltage		V_{GS}	±12	V
Drain Current, Continuous V_{GS}=-10V	T_C=25°C	I_D	-5	A
Drain Current, Pulsed *(Note 1)*		I_{DM}	-20	A
Power Dissipation	T_C=25°C	P_D	1.4	W
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}	90	°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	-20	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-20V, V_{GS}=0V	--	--	-1	uA
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS}=V_{GS}, I_{DS}=-250uA	-0.5	--	-1	V
Gate Leakage Current	I_{GSS}	V_{GS}=±12V, V_{DS}=0V	--	--	±100	nA
Drain-Source On-state Resistance *(Note 3)*	$R_{DS(on)}$	V_{GS}=-4.5V, I_D=-5A	--	29	35	mΩ
		V_{GS}=-2.5V, I_D=-3A	--	36	48	
Total Gate Charge	Q_g	$V_{GS(off)}$=0V, $V_{GS(on)}$=-10V, V_{DD}=-5V, I_D=-4.5A	--	12	--	nC
Gate-Source Charge	Q_{gs}		--	1.3	--	
Gate-Drain Charge	Q_{gd}		--	3.5	--	
Turn-on Delay Time	$t_{d(on)}$	V_{GS}=-4.5V, V_{DD}=-10V, R_L=2.5Ω, R_G=6Ω	--	11	--	ns
Turn-on Rise Time	t_r		--	10	--	
Turn-off Delay Time	$t_{d(off)}$		--	17	--	
Turn-off Fall Time	t_f		--	22	--	
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-20V, f=1MHz	--	874	--	pF
Output Capacitance	C_{oss}		--	99	--	
Reverse Transfer Capacitance	C_{rss}		--	86	--	

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	--	--	-5	A
Diode Forward Voltage *(Note 3)*	V_{SD}	I_F=-1.3A, V_{GS}=0V	--	--	-1.3	V

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

Typical Characteristics Curves (T_J = 25℃ unless otherwise noted)

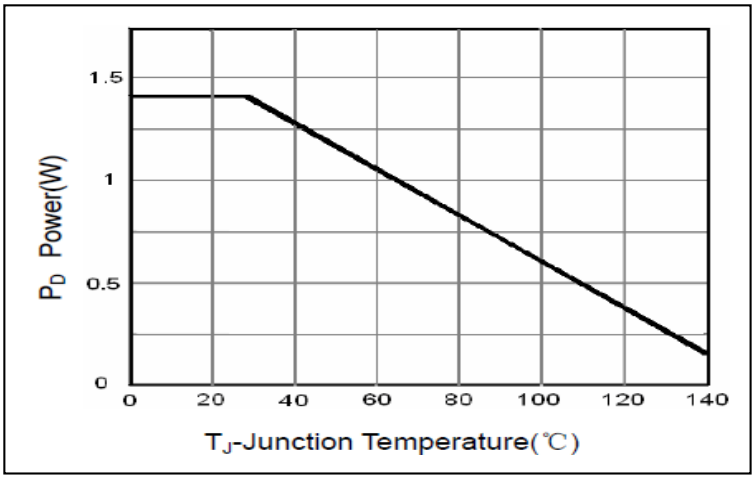


Figure 1. Power Dissipation

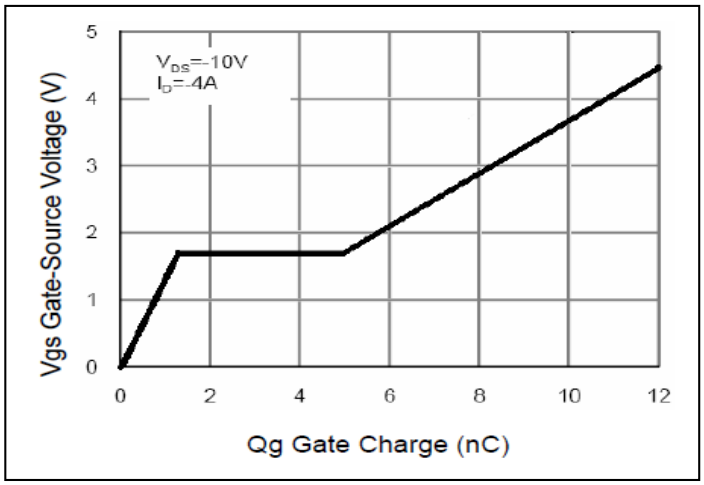


Figure 2. Gate Charge

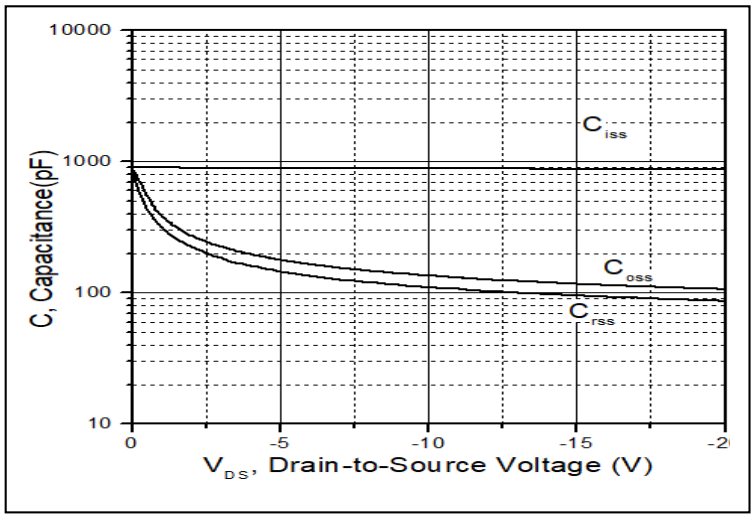


Figure 3. Capacitance Characteristics

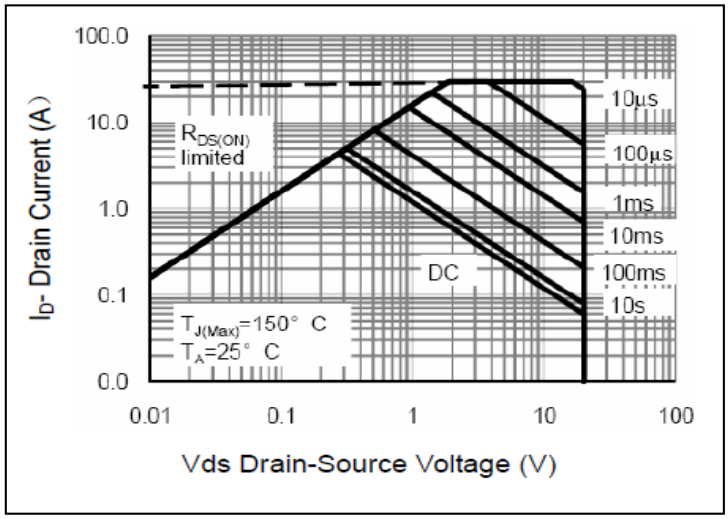


Figure 4. Safe Operation Area

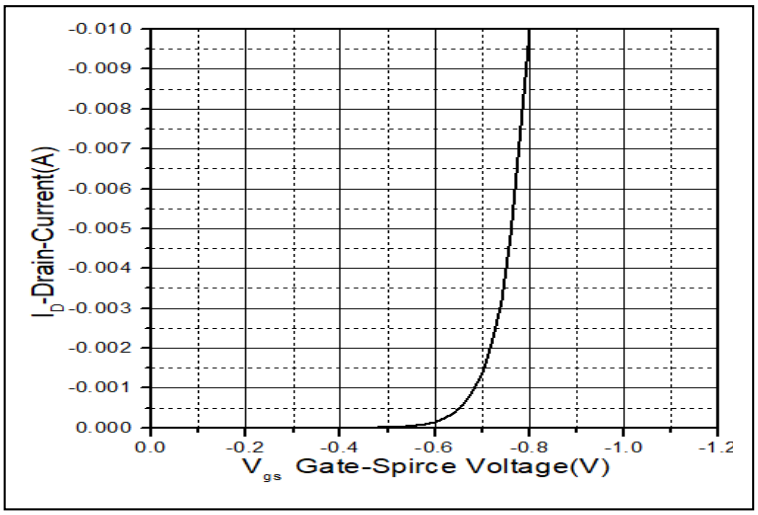


Figure5.Transfer Characteristics

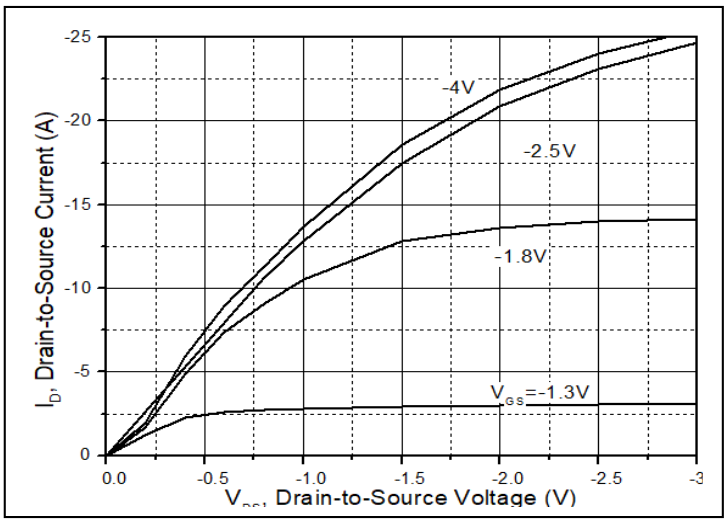
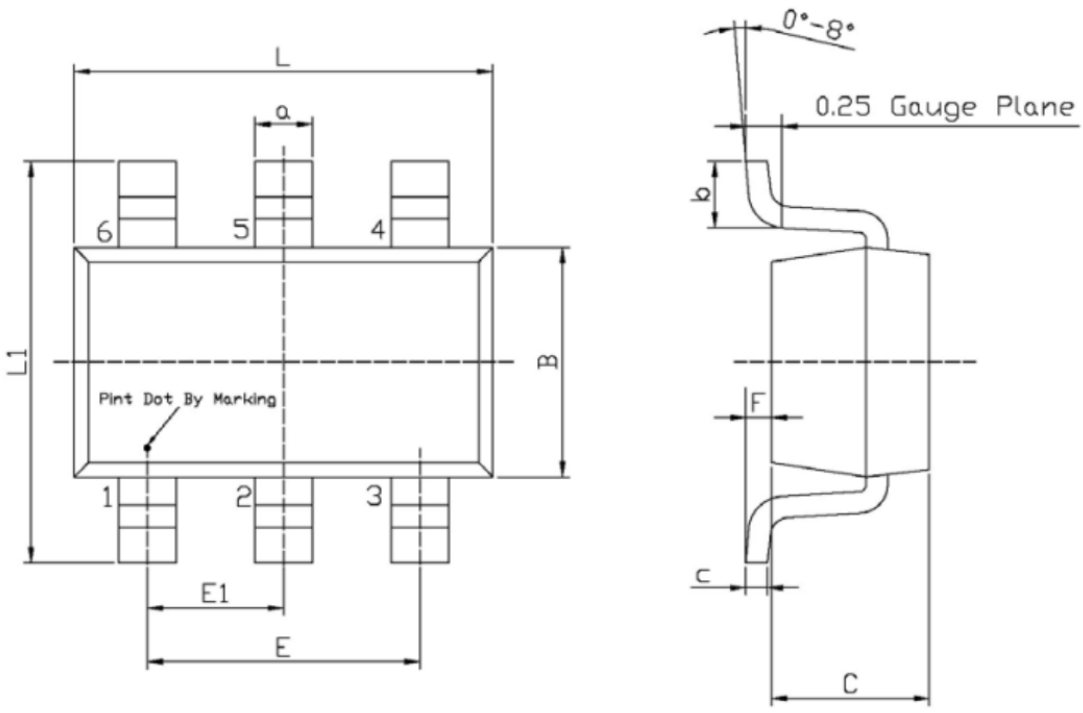


Figure 6. Typical Output Characteristics

Package Outline Dimensions (Unit: millimeters)

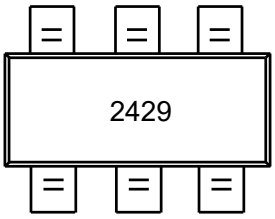
SOT-23-6



Unit: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
L	2.82	3.02	E1	0.85	1.05
B	1.50	1.70	a	0.35	0.50
C	0.90	1.30	c	0.10	0.20
L1	2.60	3.00	b	0.35	0.55
E	1.80	2.00	F	0	0.15

Marking Outline



Part Name: SSF2429UP

1. P/N Mark: 2429

Revision History

Version	Date	Major Changes
Rev.A	2025.12.15	Official Release

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