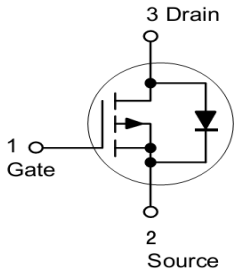
P-Channel -50V MOSFET

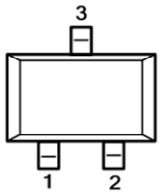
Features:

- Surface-mounted package
- Voltage controlled p-channel small signal switch
- Reduce power loss conserve energy
- Halogen free

Application

- DC-DC converters
- Energy efficient
- Power management in portable and battery-powered product.





Top View
SOT23S-3L

B_{VDSS}= -50V ,
$R_{DS(ON)} \leqq 10\Omega$@VGS= -5V
I_D= -130mA

Absolute Maximum Ratings (TA=25℃ Unless Otherwise Noted)

Parameter		Symbol / Marking	BSS84 / PD	Unit
Drain-Source Voltage		V_{DSS}	-50	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current@Ta=25℃		I_D	-130	mA
Pulsed Drain Current($t_p \leqq$ 10us)		I_{DM}	-520	mA
Power Dissipation	Ta=25℃	P_D	225	mW
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to150	℃

Thermal Characteristics

Symbol	Characteristic	Typ.	Max.	Units
$R_{\theta JA}$	Junction-to-Ambient	---	556	℃/W

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Electrical Characteristics (TA =25℃ Unless Otherwise Specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Static(1)						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V,I_D=-250μA	-50	--	--	V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS},I_D=-250μA	-0.8	--	-2	V
I_{GSS}	Gate-Body Leakage	V_{DS} =0V,V_{GS}=±20V	--	--	±100	nA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} =-50V,V_{GS}=0V	--	--	-15	μA
$R_{DS(ON)}$	Drain-Source On-Resistance	V_{GS}=-5 V, I_D=-100mA	--	8	10	Ω
Dynamic(2)						
C_{iss}	Input Capacitance	V_{DS}=-5V, V_{GS}=0V, f =1.0MHz	--	35	--	pF
C_{oss}	Output Capacitance		--	14	--	
C_{rss}	Reverse Transfer Capacitance		--	6	--	
$t_{d(on)}$	Turn-On Delay Time	V_{DS}=-15V, I_D=-0.25Adc, V_{GS}=-10Vdc, R_{GEN}=25Ω, R_L=50Ω	--	1	--	ns
t_r	Turn-On Rise Time		--	20	--	
$t_{d(off)}$	Turn-Off Delay Time		--	12	--	
t_f	Turn-Off Fall Time		--	23	--	
Q_T	Gate Charge	V_{DS}=-40V, V_{GS}=-10V, I_D=-1A	--	2	--	nC
Source-Drain Diode Ratings and Characteristics						
V_{SD}	Diode Forward voltage(2)	I_S=130mA	--	--	-2.2	V

Notes：

(1) Pulse test：pulse width≦ 300us, duty cycle≦2%

(2) Switching characteristics are independent of operating junction temperature.

TYPICAL ELECTRICAL CHARACTERISTICS

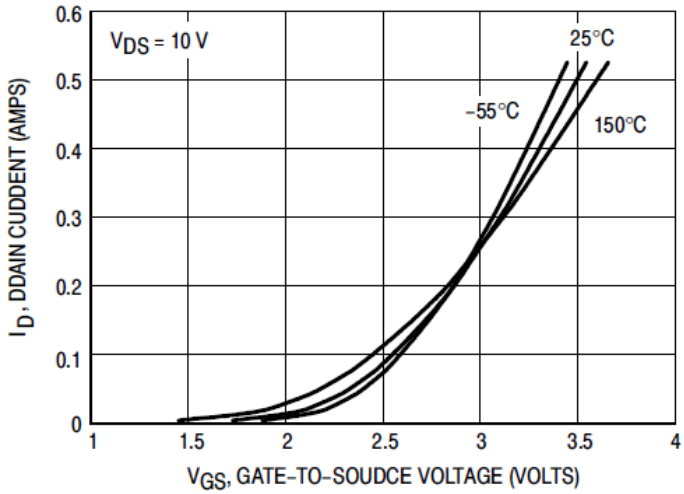

Figure 1. Transfer Characteristics

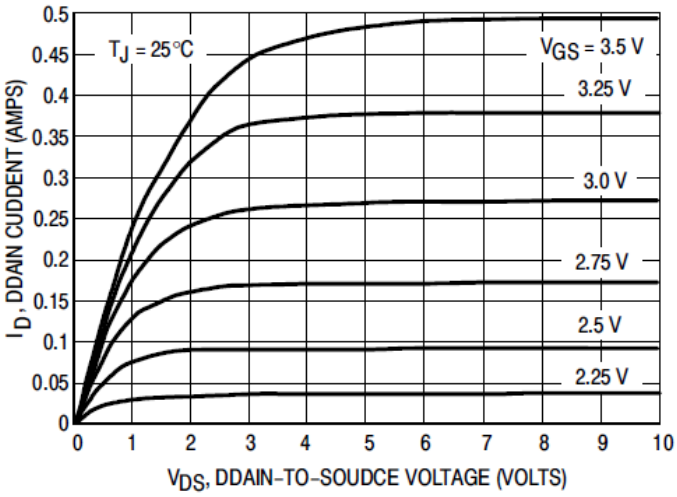

Figure 2. On–Region Characteristics

P-Channel -50V MOSFET

TYPICAL ELECTRICAL CHARACTERISTICS

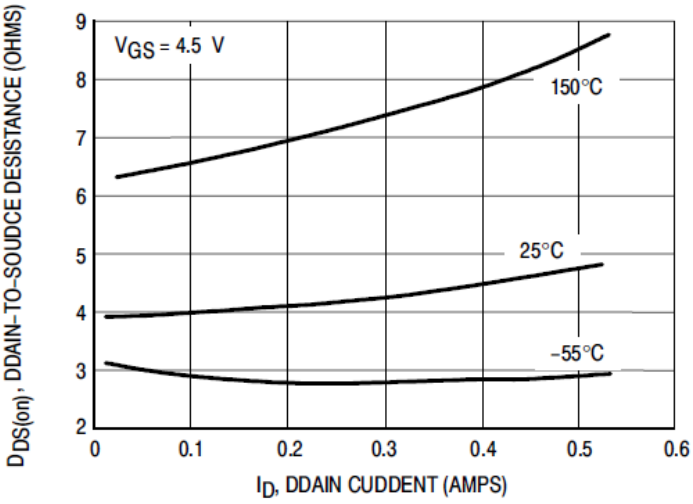

Figure 3. On–Resistance versus Drain Current

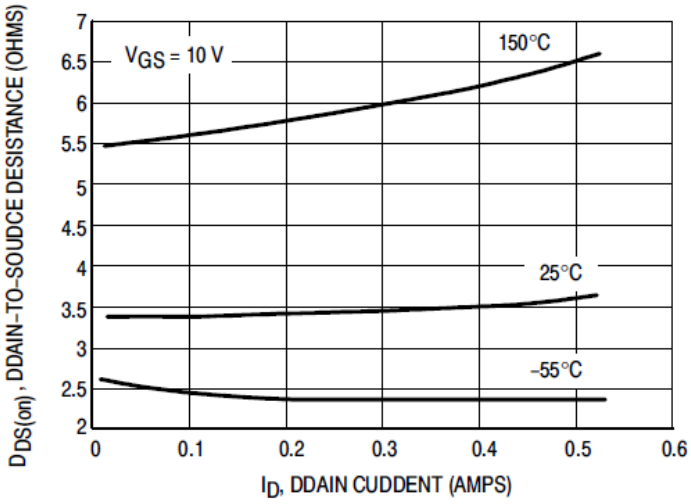

Figure 4. On–Resistance versus Drain Current

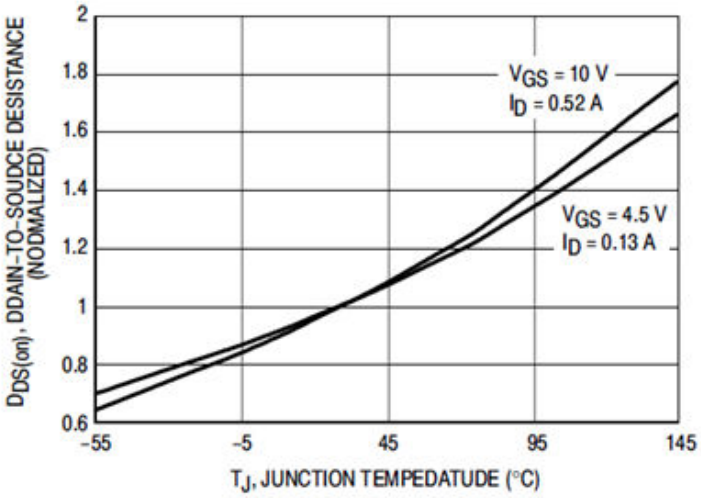

Figure 5. On–Resistance Variation with Temperature

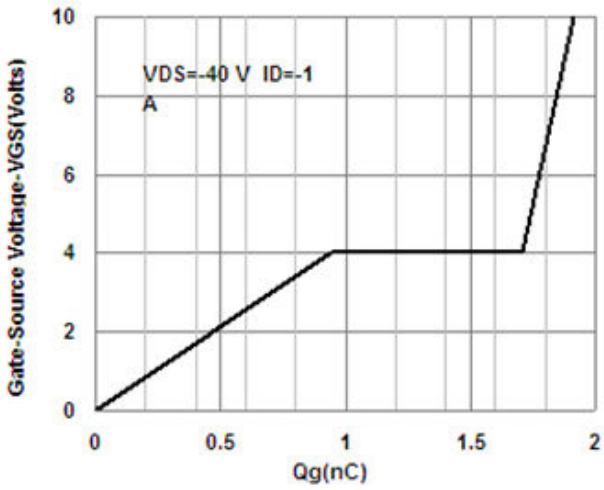

Fig.6 Gate-Charge Characteristics

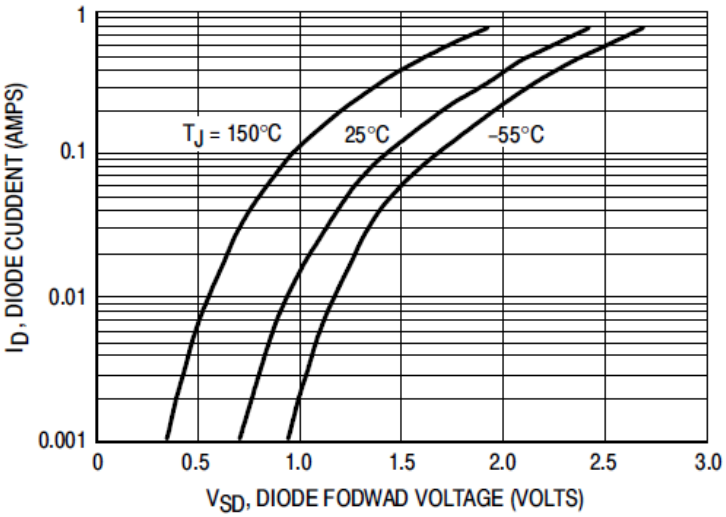

Figure 7. Body Diode Forward Voltage

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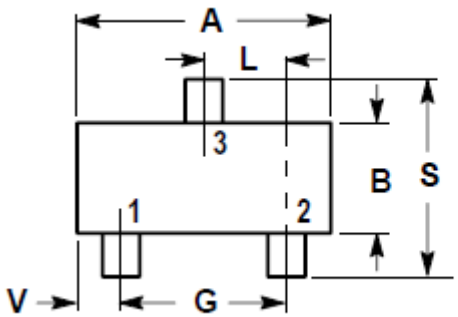
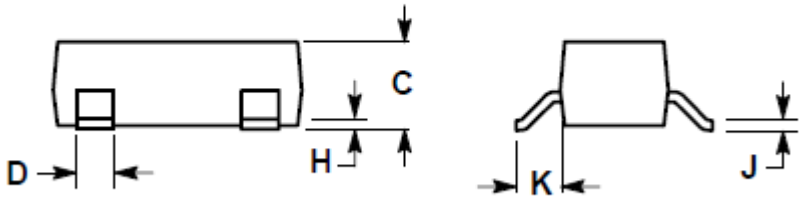
Package Dimension：SOT-23



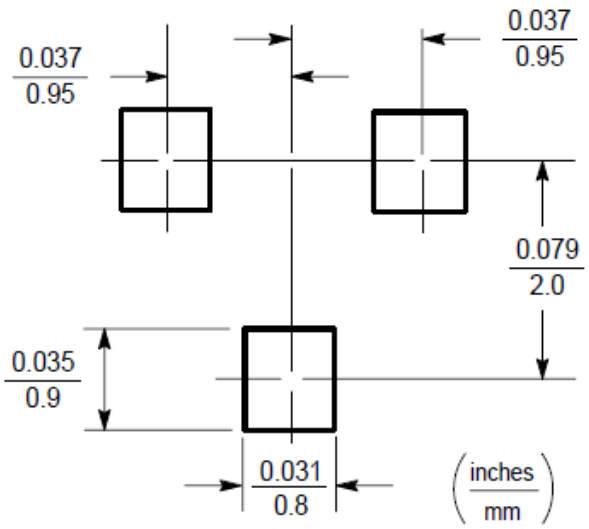


NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M,1982
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

SOLDERING FOOTPRINT*



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