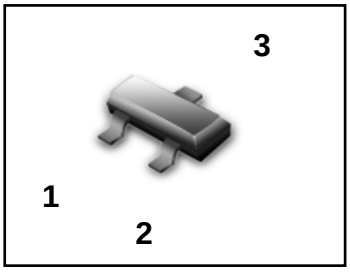
These miniature surface mount MOSFETs reduce power loss conserve energy, making this device ideal for use in small power management circuitry. Typical applications are dc–dc converters, load switching , power management in portable and battery–powered products such as computers , printers , cellular and cordless telephones.



SOT-23

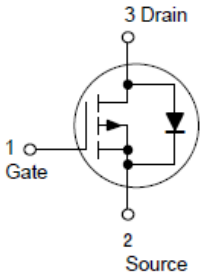
●FEATURES

1)Energy Efficient

2)Miniature SOT–23 Surface Mount Package Saves Board Space

3)We declare that the material of product compliant with RoHS requirements and Halogen Free.

4)S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.



MARKING:65D

●MAXIMUM RATINGS(Ta = 25℃)

Parameter	Symbol	Limits	Unit
Drain–to–Source Voltage	V_{DSS}	60	V
Gate–to–Source Voltage – Continuous	V_{GS}	±20	V
Drain Current – Continuous @ T_A = 25°C – Pulsed Drain Current ($t_p \leqslant 10$ μs)	 I_D I_{DM}	 330 520	mA
Total Power Dissipation @ T_A = 25°C	P_D	225	mW
Junction and Storage temperature	Tj,Tstg	−55～+150	℃
Thermal Resistance – Junction–to–Ambient	$R_{\Theta JA}$	556	℃/W
Maximum Lead Temperature for SolderingPurposes, for 10 seconds	T_L	260	℃

●ELECTRICAL CHARACTERISTICS (Ta= 25℃)

OFF CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Drain–to–Source Breakdown Voltage (V_{GS} = 0 Vdc, I_D = 250 μAdc)	$V_{BR(DSS)}$	60	–	–	V
Zero Gate Voltage Drain Current	I_{DSS}				μA
(V_{DS} = 25 Vdc, V_{GS} = 0 Vdc)		–	–	0.1	
(V_{DS} = 50 Vdc, V_{GS} = 0 Vdc)		–	–	15	
(V_{DS} = 50 Vdc, V_{GS} = 0 Vdc, T_J = 125°C)		–	–	60	
Gate–Body Leakage Current (V_{GS} = ± 20 Vdc, V_{DS} = 0 Vdc)	I_{GSS}	–	–	±10	nA

ON CHARACTERISTICS (Note 1.)

Gate–Source Threaded Voltage (V_{DS} = V_{GS}, I_D = 250μAdc)	$V_{GS(th)}$	0.8	–	2.0	V
Static Drain–to–Source On–Resistance (V_{GS} = 5.0 Vdc, I_D = 100 mAdc)	$R_{DS(on)}$	–	5.0	10	Ohms
Transfer Admittance (V_{DS} = 25 Vdc, I_D = 100 mAdc, f = 1.0 kHz)	|yfs|	50	–	–	mS

DYNAMIC CHARACTERISTICS

Input Capacitance(V_{DS} = 5.0 Vdc)	Ciss	–	30	–	pF
Output Capacitance(V_{DS} = 5.0 Vdc)	Coss	–	10	–	
Transfer Capacitance(V_{DG} = 5.0 Vdc)	C_{RSS}	–	5	–	

SWITCHING CHARACTERISTICS (Note 2.)

Turn–On Delay Time	(V_{DD} = –15 Vdc, I_D = –2.5 Adc,R_L = 50 Ω)	$t_{d(on)}$	–	2.5	–	ns
Rise Time		t_r	–	1	–	
Turn–Off Delay Time		$t_{d(off)}$	–	16	–	
Fall Time		t_f	–	8	–	
Gate Charge		Q_T	–	6000	–	pC

SOURCE–DRAIN DIODE CHARACTERISTICS

Continuous Current	I_S	–	–	0.33	A
Pulsed Current	I_{SM}	–	–	0.52	
Forward Voltage (Note 2.)	V_{SD}	–	2.5	–	V

1. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2%.
2. Switching characteristics are independent of operating junction temperature.

ELRCTRICAL CHARACTERISTICS CURVES

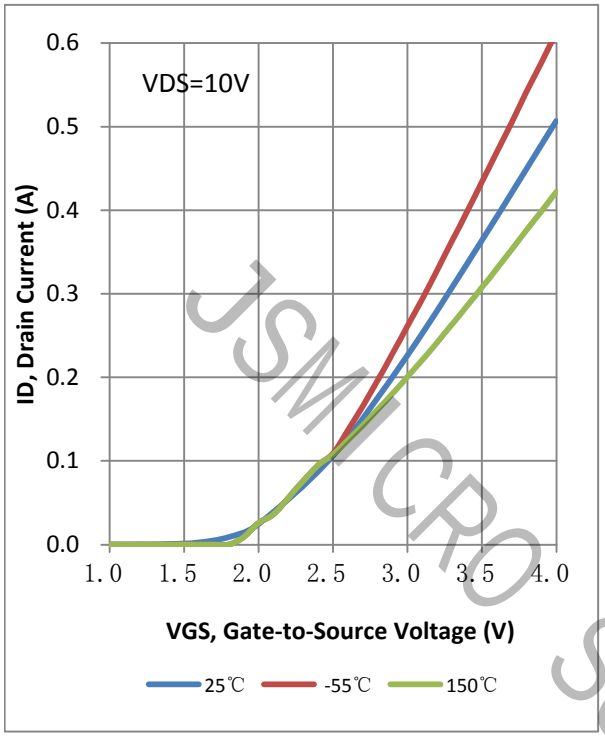


FIG. 1 Transfer Characteristics

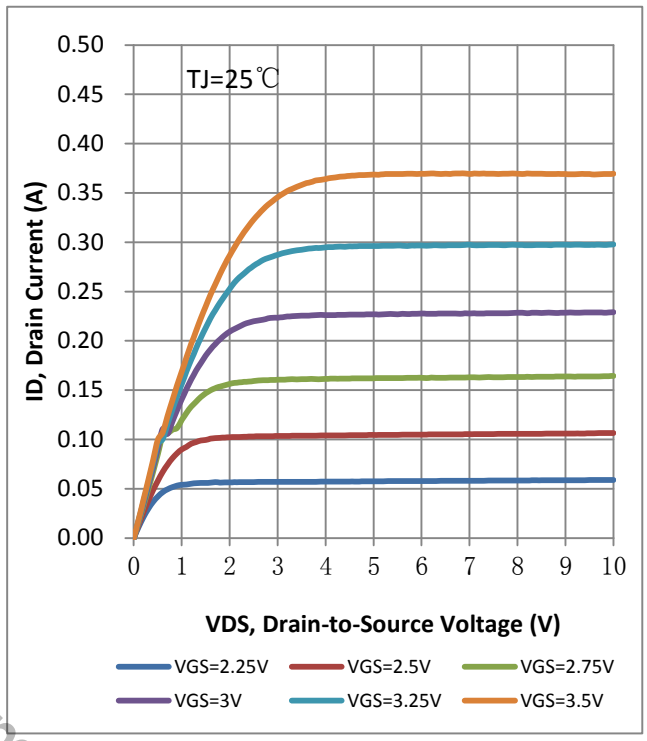


FIG. 2 On-Region Characteristics

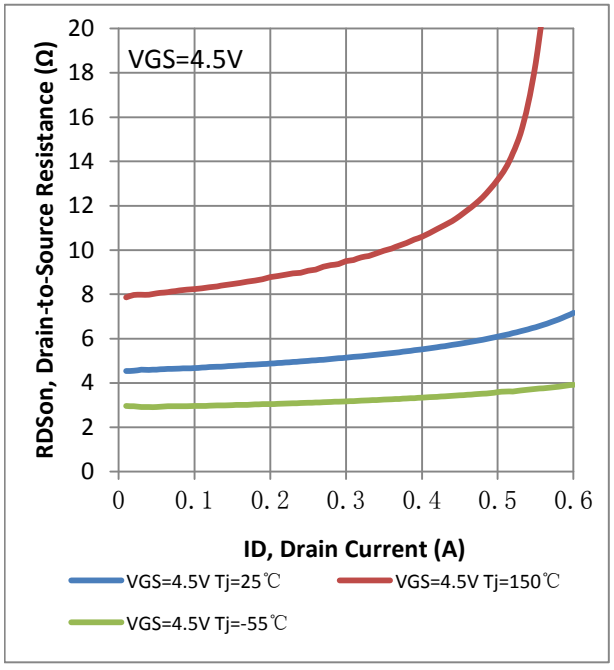


FIG. 3 On-Resistance versus Drain Current

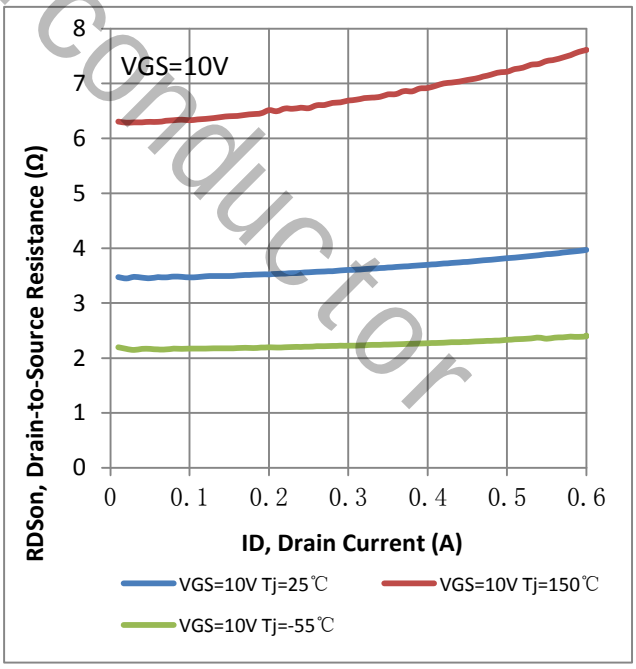


FIG. 4 On-Resistance versus Drain Current

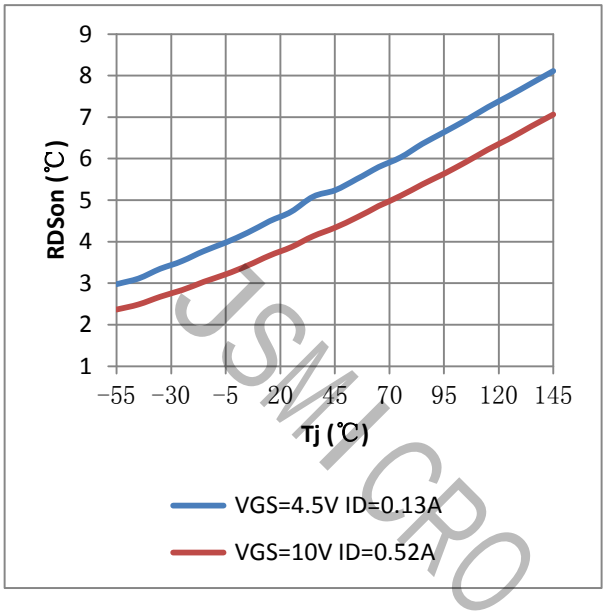


FIG. 5 On-Resistance Variation with Temperature

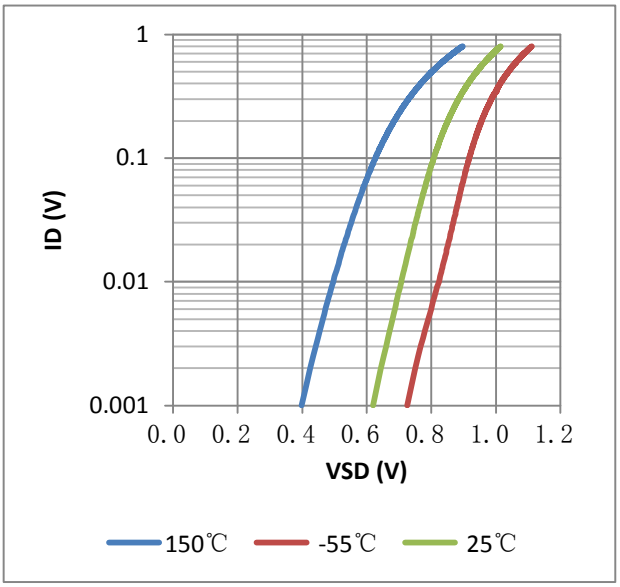
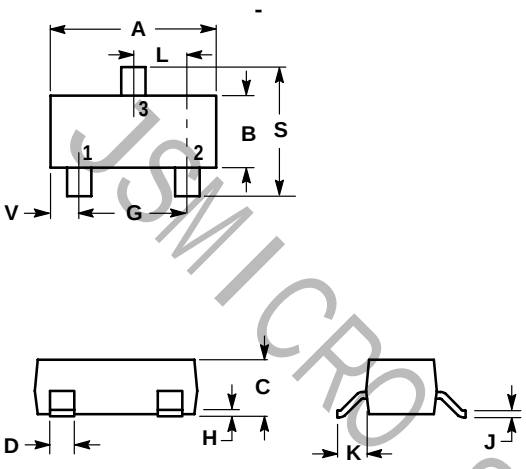


FIG. 6 Body Diode Forward Voltage

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