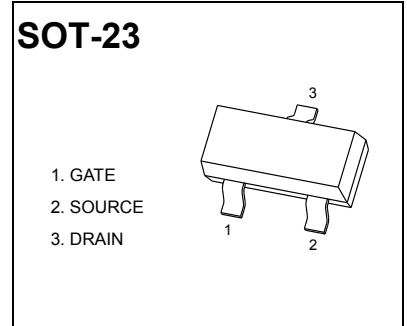
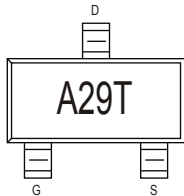
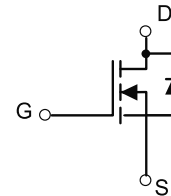


SOT-23 Plastic-Encapsulate MOSFETS
30V N-Channel MOSFET

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
30V	28 mΩ@10V	5A
	34 mΩ@4.5V	

Features

Lead free product is acquired
Surface mount package


MARKING

Equivalent circuit

PACKAGE SPECIFICATIONS

Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (pcs)	Box Size (mm)	QTY/Box (pcs)	Carton Size (mm)	Q'TY/Carton (pcs)
SOT-23	7'	178	3000	203×203×195	45000	438×438×220	180000

Maximum Ratings and Thermal Characteristics (TA = 25°C unless otherwise noted)

Parameter	Symbol	Limit	Unit	
Drain-Source Voltage	V_{DS}	30	V	
Gate-Source Voltage	V_{GS}	±16		
Continuous Drain Current	I_D	TA=25°C	5.0	A
		TA=70°C	4	
Maximum Power Dissipation ²⁾	P_D	TA=25°C	1.5	W
		TA=70°C	0.9	
Pulsed Drain Current ¹⁾	I_{DM}	20.4	A	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-50 to 150	°C	
Thermal Resistance Junction-Ambient	$R_{\theta JA}$	80	°C/W	

Notes

- 1) Pulse width limited by maximum junction temperature.
2) Surface Mounted on FR4 Board, t ≤ 5 sec.

The above data are for reference only.



MOSFET ELECTRICAL CHARACTERISTICS

T_a=25 °C unless otherwise specified

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D = 250uA	30			V
Drain-Source On-State Resistance ¹⁾	R _{DS(on)}	V _{GS} = 10V, I _D = 4.0A		28	36	mΩ
		V _{GS} = 4.5V, I _D = 3.0A		34	50	
		V _{GS} = 2.5V, I _D = 1.0A		55	80	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250uA	0.5	0.8	1.2	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V			1	uA
Gate Body Leakage	I _{GSS}	V _{GS} =±16V, V _{DS} =0V			100	nA
Forward Transconductance ¹⁾	g _{fs}	V _{DS} = 15V, I _D = 4A		8	—	S
Dynamic						
Total Gate Charge	Q _g	V _{DS} = 15V, I _D = 4A V _{GS} = 4.5V		3.1		nC
Gate-Source Charge	Q _{gs}			0.4		
Gate-Drain Charge	Q _{gd}			1.3		
Turn-On Delay Time	t _{d(on)}	V _{DD} = 15V, R _G =3.3 Ω I _D = 1A, V _{GS} = 10V		4.4		ns
Turn-On Rise Time	t _r			2.6		
Turn-Off Delay Time	t _{d(off)}			25.5		
Turn-Off Fall Time	t _f			3.3		
Input Capacitance	C _{iss}	V _{DS} = 15V, V _{GS} = 0V f = 1.0 MHz		240		pF
Output Capacitance	C _{oss}			35		
Reverse Transfer Capacitance	C _{rss}			30		
Source drain current(Body Diode)	I _{SD}				1.8	A
Diode Forward Voltage	V _{SD}	I _S = 4.0A, V _{GS} = 0V		0.85	1.2	V

¹⁾ Pulse test : Pulse width ≤ 300μs, duty cycle ≤ 2%.

Typical Characteristics

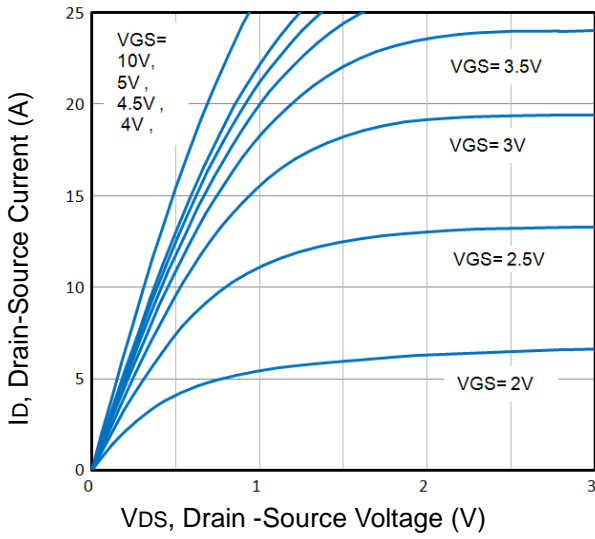


Fig1. Typical Output Characteristics

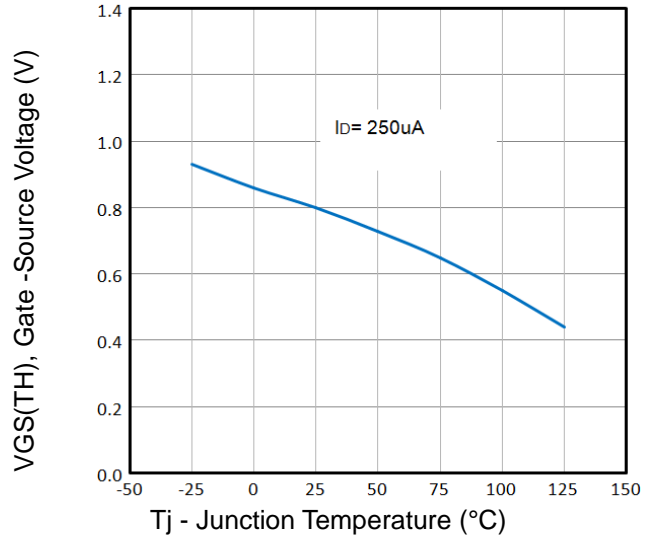


Fig2. Normalized Threshold Voltage Vs. Temperature

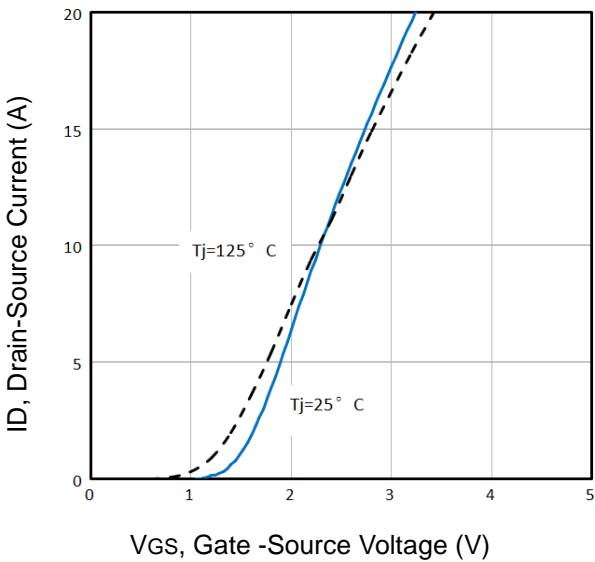


Fig3. Typical Transfer Characteristics

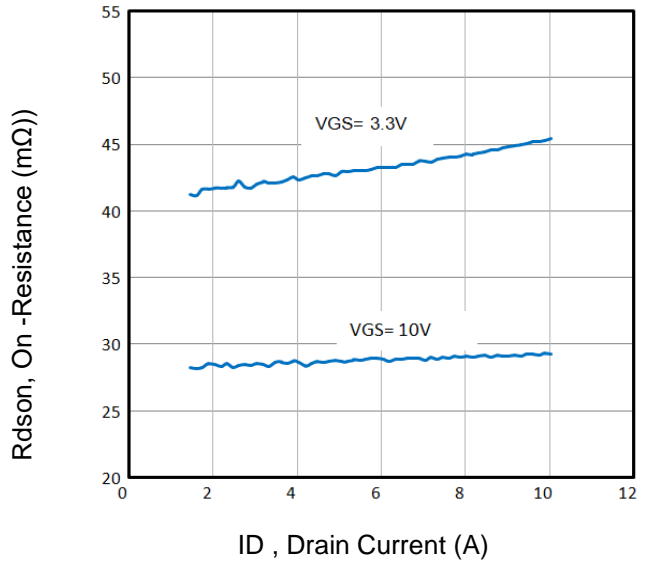


Fig4. On-Resistance vs. Drain Current and Gate

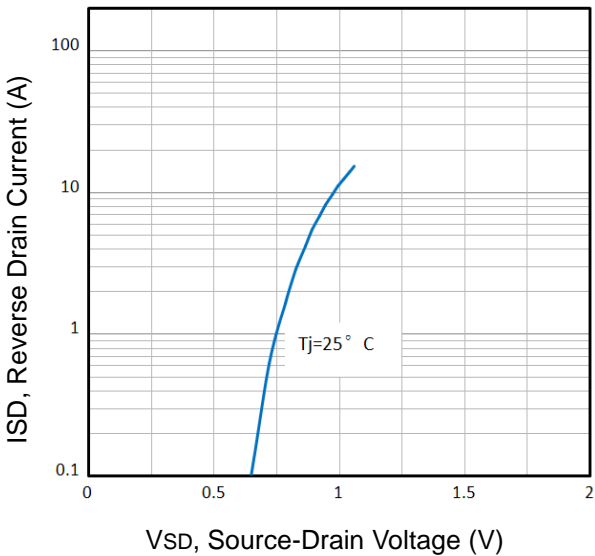


Fig5. Typical Source-Drain Diode Forward Voltage

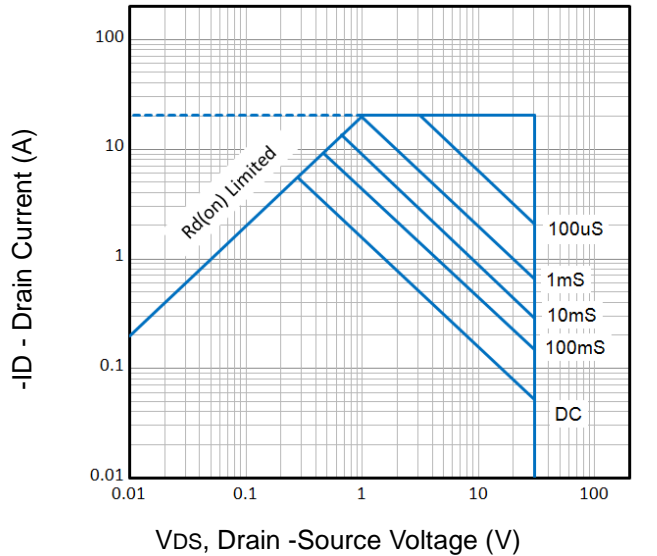


Fig6. Maximum Safe Operating Area

Typical Characteristics

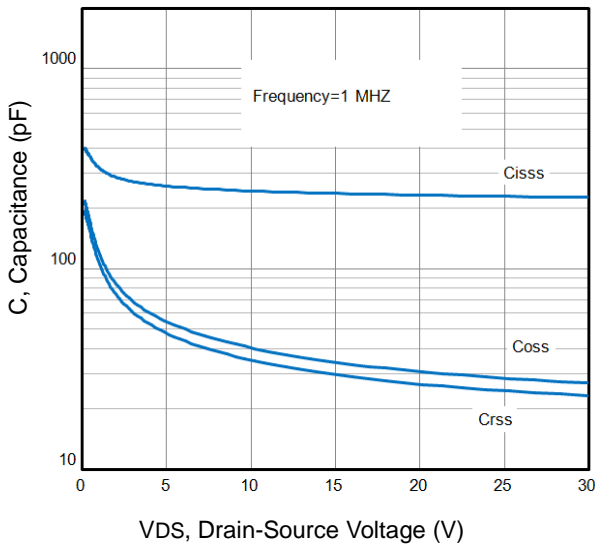


Fig7. Typical Capacitance Vs. Drain-Source Voltage

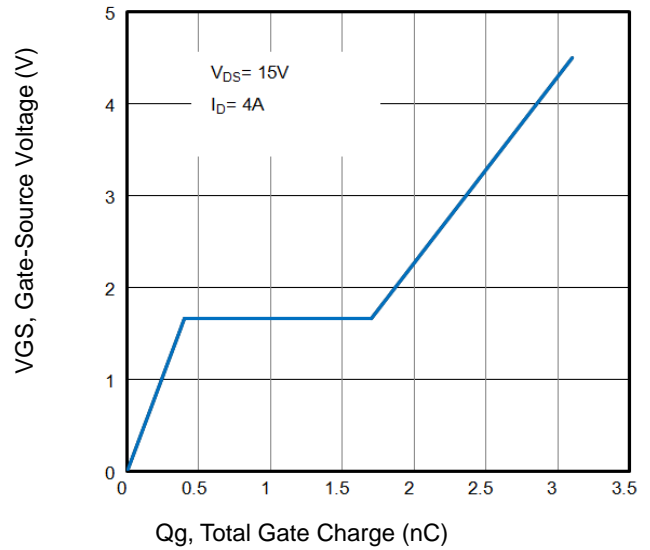


Fig8. Typical Gate Charge Vs. Gate-Source Voltage

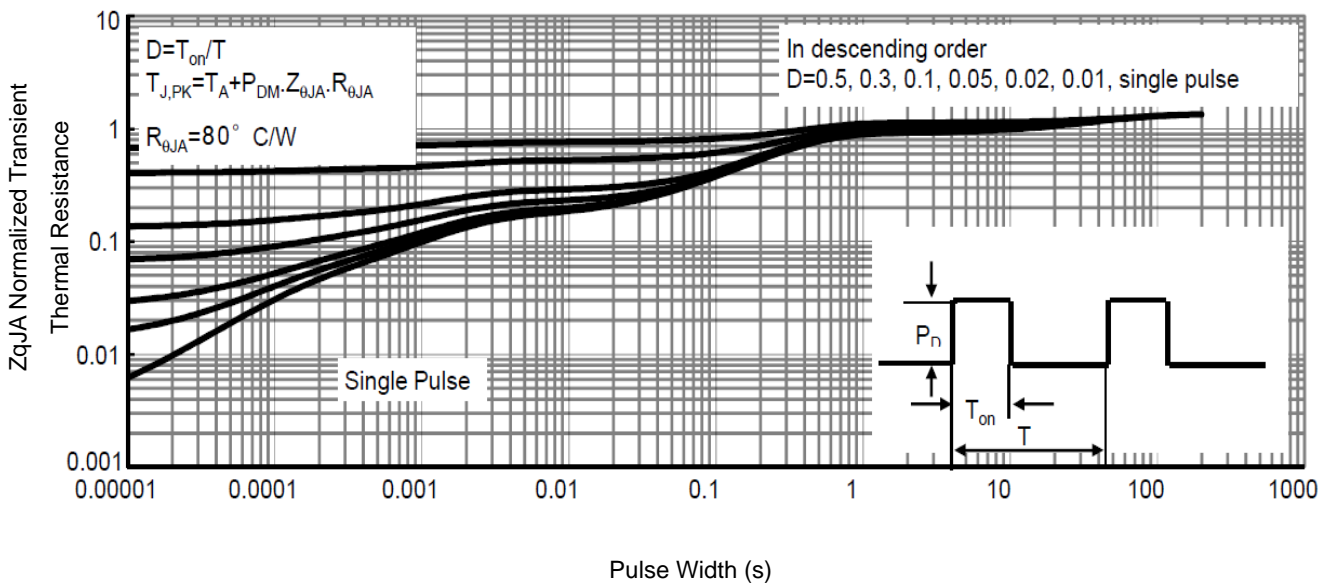


Fig9. Normalized Maximum Transient Thermal Impedance

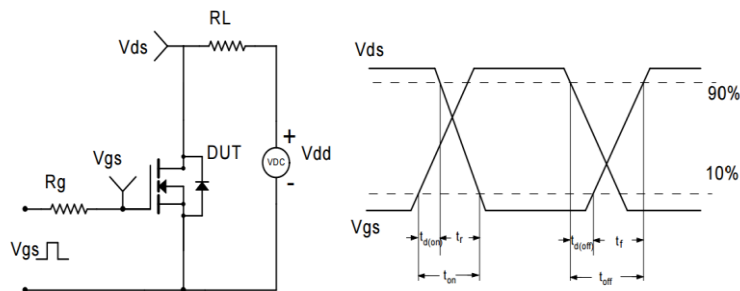
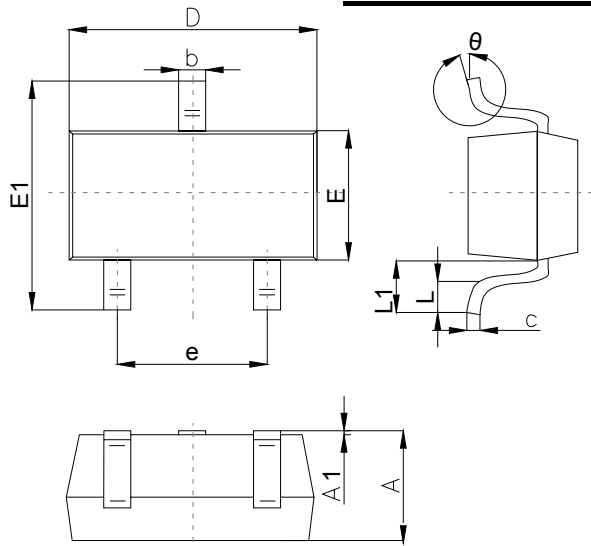


Fig10. Switching Time Test Circuit and waveforms

The curve above is for reference only.

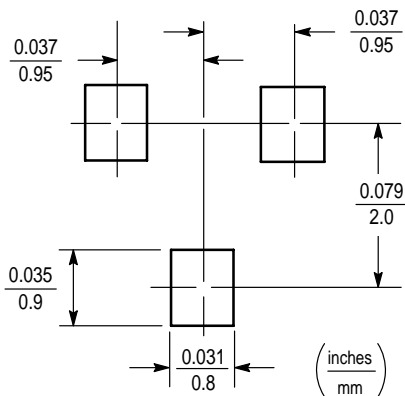
Outline Drawing

SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		
	Min	Typ	Max
A	1.00		1.40
A1			0.10
b	0.35		0.50
c	0.10		0.20
D	2.70	2.90	3.10
E	1.40		1.60
E1	2.4		2.80
e		1.90	
L	0.10		0.30
L1	0.4		
θ	0°		10°

Suggested Pad Layout



Note:
 1. Controlling dimension: in/millimeters.
 2. General tolerance: ±0.05mm.
 3. The pad layout is for reference purposes only.

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