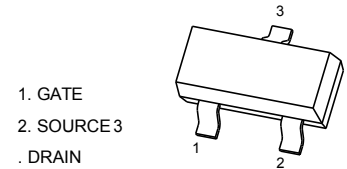


30V N-Channel MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$ Typ	I_D Max
30V	28mΩ@10V	5.0A
	38mΩ@4.5V	

SOT-23



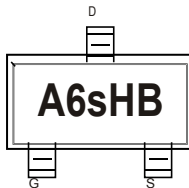
FEATURE

- Trench FET Power MOSFET

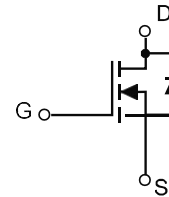
APPLICATION

- Load Switch for Portable Devices
- DC/DC Converter

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}	±20	
Continuous Drain Current	I_D	5.0	A
		4	
Pulsed Drain Current ¹⁾	I_{DM}	20.4	A
Maximum Power Dissipation ^{1),2)}	P_D	1.5	W
		0.9	
Maximum Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{stg}	-50 to 150	°C
Thermal Resistance from Junction-to-Ambient (t≤5s)	$R_{\theta JA}$	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

$T_a=25^{\circ}\text{C}$ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	30			V
Gate-body leakage	I _{GSS}	V _{GS} =±20V, V _{DS} =0V			±100	nA
Zero gate voltage drain current	I _{DSS}	V _{DS} =30V, V _{GS} =0V			1	μA
		V _{DS} =24V, V _{GS} =0V			100	μA
Gate-threshold voltage (note 1)	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1.0	1.6	2.5	V
Ddrain-source on-resistance (note 1)	R _{DS(on)}	V _{GS} =10V, I _D =4A		28	36	mΩ
		V _{GS} =4.5V, I _D =3A		38	50	
Forward transconductance (note 1)	g _{FS}	V _{DS} =4.5V, I _D =2.5A		7		S
Dynamic characteristics						
Gate Resistance	R _g	f=1MHz	2.5	5	7.5	Ω
Total Gate C harge	Q _g	V _{DS} =15V, I _D =4A, V _{GS} =10V		6		nC
Gate-Source Charge	Q _{gs}			0.5		
Gate-Drain Charge	Q _{gd}			1.3		
Input capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f=1MHz		240		pF
Output capacitance	C _{oss}			35		
Reverse transfer capacitance	C _{rss}			30		
Switching characteristics						
Turn-on delay time	t _{d(on)}	V _{DD} =15V, V _{GS} =10V, I _D =1A, R _G =3.3Ω		4.4		ns
Rise time	t _r			2.6		
Turn-off delay time	t _{d(off)}			25.5		
Fall time	t _f			3.3		
Drain-source body diode characteristics						
Source drain current(Body Diode)	I _{SD}				1.8	A
Body diode forward voltage (note 1)	V _{SD}	I _{SD} =4A, V _{GS} = 0V		0.85	1.2	V

Notes :

1. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

Typical Characteristics

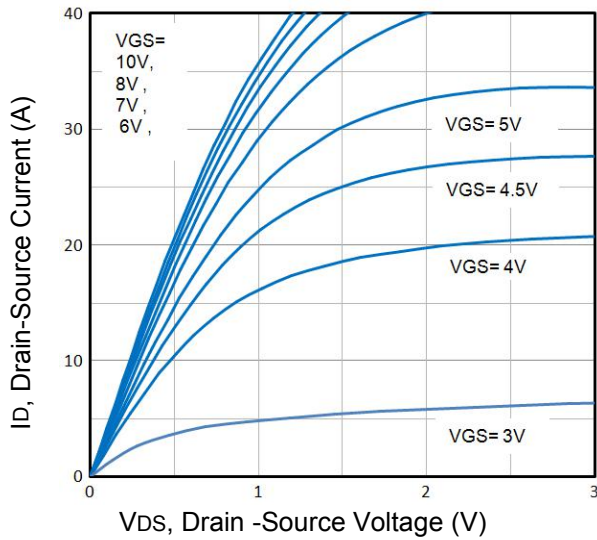


Fig1. Typical Output Characteristics

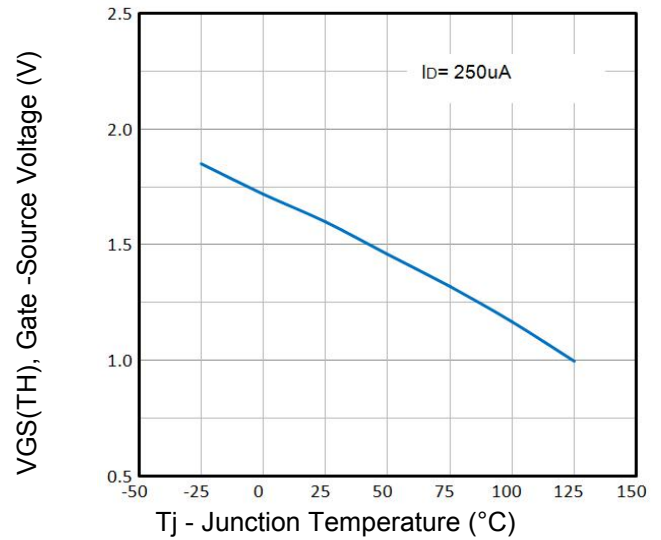


Fig2. Normalized Threshold Voltage Vs. Temperature

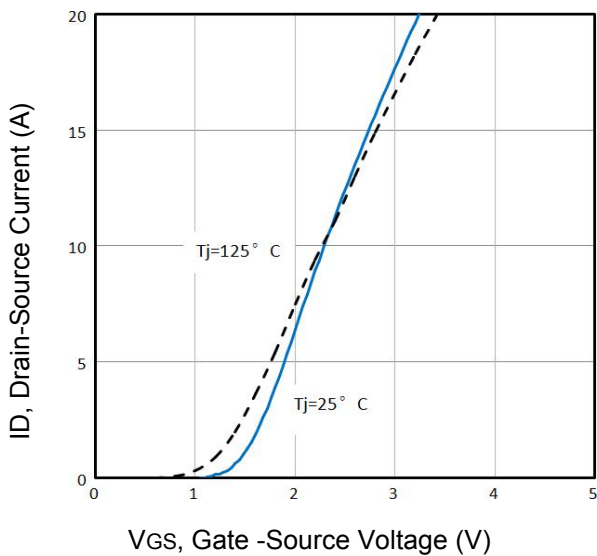


Fig3. Typical Transfer Characteristics

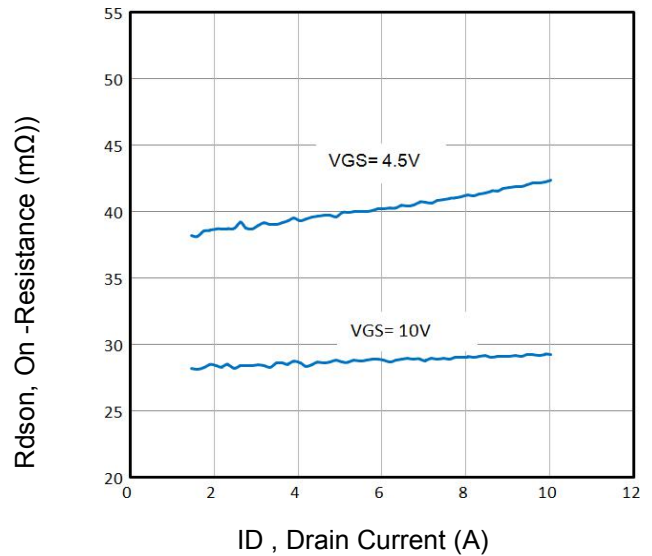


Fig4. On-Resistance vs. Drain Current and Gate

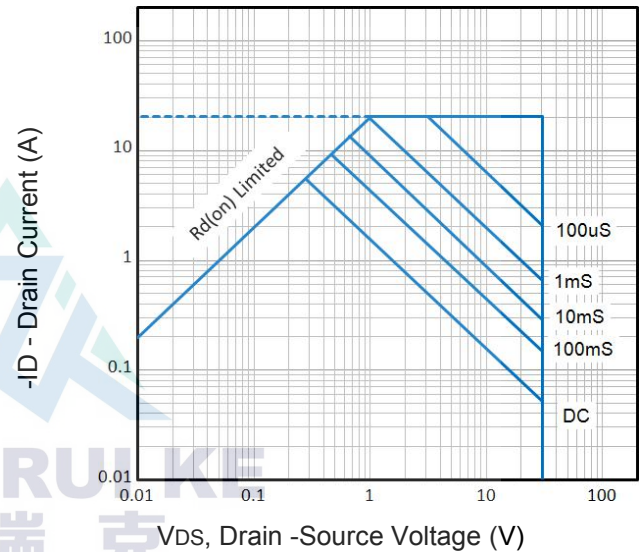
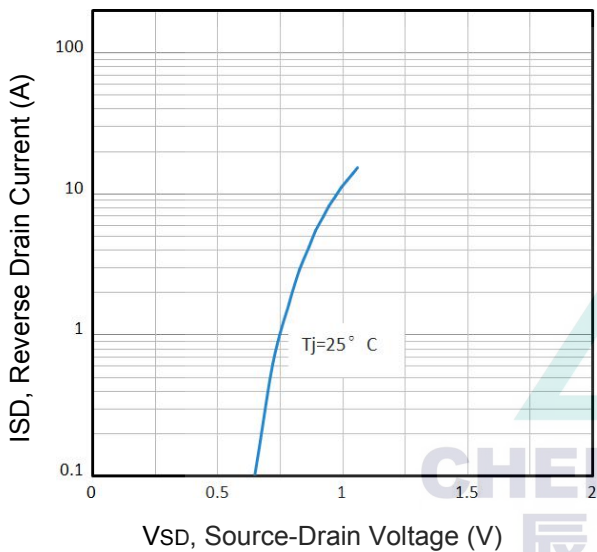


Fig6. Maximum Safe Operating Area

Typical Characteristics

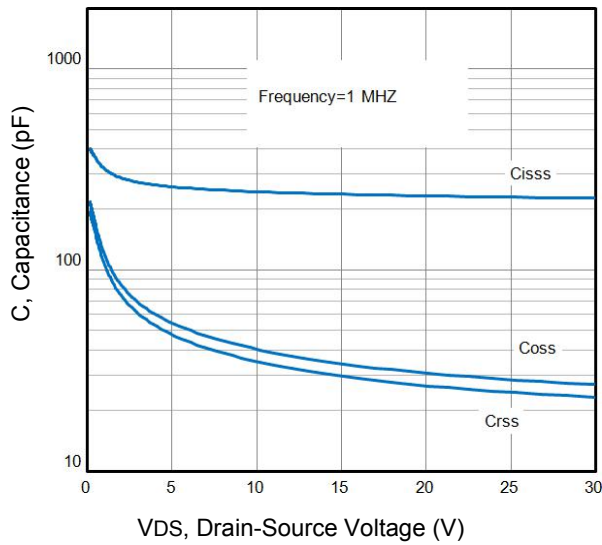


Fig7. Typical Capacitance Vs. Drain-Source Voltage

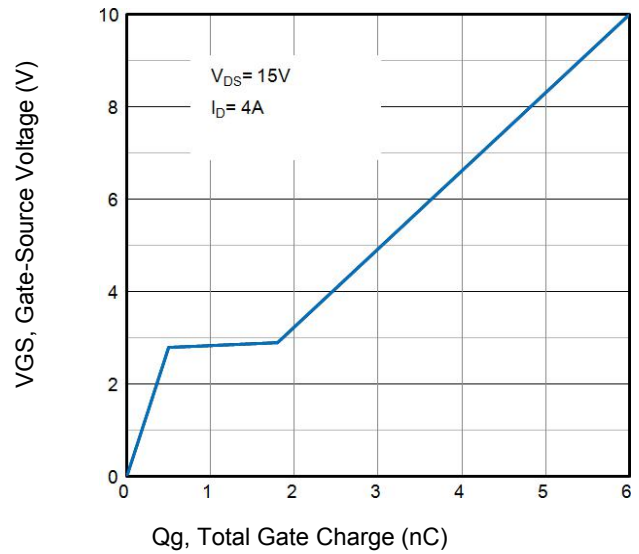


Fig8. Typical Gate Charge Vs. Gate-Source Voltage

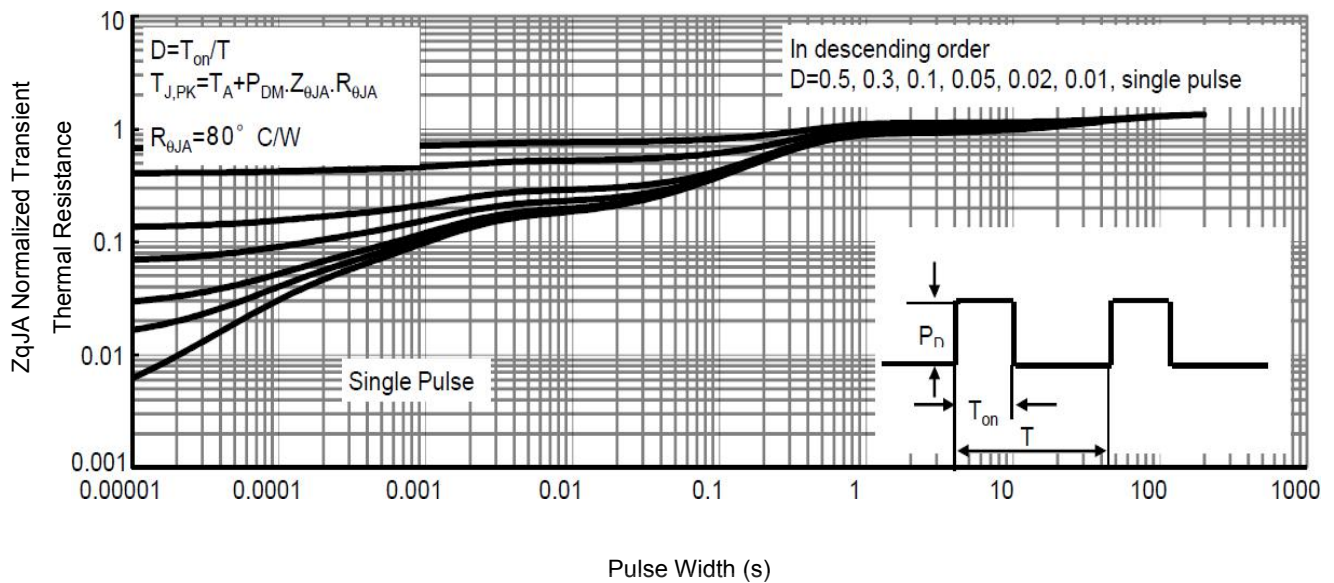


Fig9. Normalized Maximum Transient Thermal Impedance

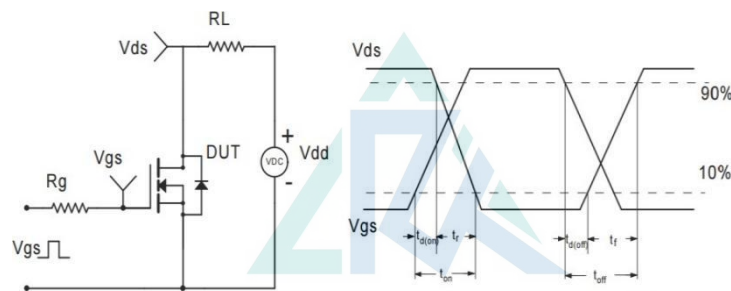
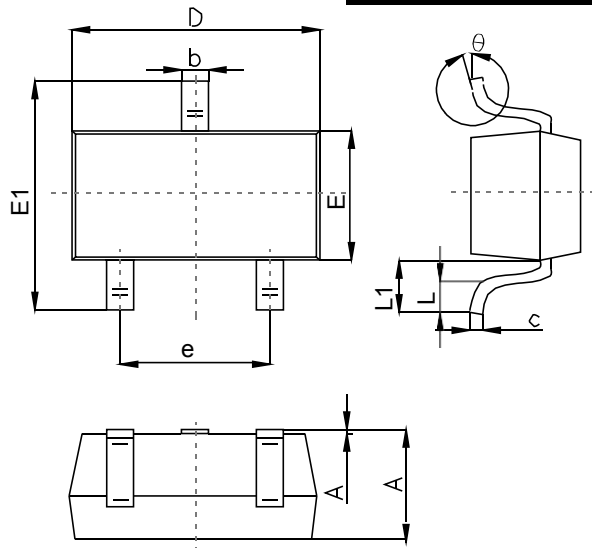


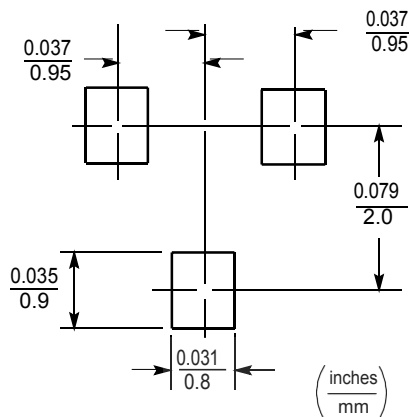
Fig10. Switching Time Test Circuit and waveforms

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.