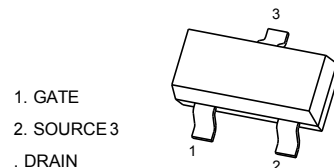


$V_{(BR)DSS}$	$R_{DS(on)}$ Typ	I_D
30 V	24mΩ @ 10V	5.0A
	28mΩ @ 4.5V	

SOT-23



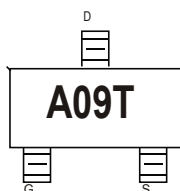
FEATURE

High dense cell design for extremely low RDS(ON)
Exceptional on-resistance and maximum DC current capability

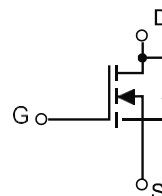
APPLICATION

- 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'	330	3000	203×203×195	45000	438×438×220	180000

MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	30	V
Gate-Source Voltage	V_{GS}	±12	
Continuous Drain Current	I_D	5.0	A
		4.1	
Maximum Power Dissipation ²⁾	P_D	1.5	W
		0.9	
Pulsed Drain Current ¹⁾	I_{DM}	20	A
Operating Junction and Storage Temperature Range	T_J	150	°C
Storage Temperature Range	T_{stg}	-50 to 150	°C
Thermal Resistance Junction-Ambient	$R_{\theta JA}$	100	°C/W

Notes

¹⁾ Pulse width limited by maximum junction temperature.

²⁾ Surface Mounted on FR4 Board, $t \leq 5$ sec.

³⁾ The above data are for reference only.

DN:T20220A1

T_a=25 °C unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Off Characteristics						
Drain-source breakdown voltage	V _{(BR) DSS}	V _{GS} = 0V, I _D =250uA	30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =30V, V _{GS} = 0V			1	uA
	I _{DSS}	V _{DS} =24V, V _{GS} = 0V			100	uA
Gate-source leakage current	I _{GSS}	V _{GS} =±12V, V _{DS} = 0V			±100	nA
On characteristics						
Drain-source on-resistance (note 3)	R _{DS(on)}	V _{GS} =10V, I _D =5A		24	30	m Ω
		V _{GS} =4.5V, I _D =4A		28	35	m Ω
		V _{GS} =3.3V, I _D =2A		33	45	m Ω
Forward tranconductance	g _{FS}	V _{DS} =5V, I _D =5A	8			S
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	0.5	0.8	1.2	V
Dynamic Characteristics (note 4)						
Input capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f =1MHz		490		pF
Output capacitance	C _{oss}			51		pF
Reverse transfer capacitance	C _{rss}			43		pF
Total Gate Charge	Q _g	V _{DS} =15V I _D =5A, V _{GS} =4.5V		6.2		nC
Gate Source Charge	Q _{gs}			0.9		nC
Gate Drain Charge	Q _{gd}			2		nC
Switching Characteristics (note 4)						
Turn-on delay time	t _{d(on)}	V _{DD} =15V, I _D =5A, R _G =3.3Ω, V _{GS} =4.5V		6.5		ns
Turn-on rise time	t _r			15		ns
Turn-off delay time	t _{d(off)}			32		ns
Turn-off fall time	t _f			4		ns
Drain-source diode characteristics and maximum ratings						
Source drain current(Body Diode)	I _{SD}	T _A =25℃			1.5	A
Diode forward voltage (note 3)	V _{SD}	I _S =4A, V _{GS} =0V		0.81	1.2	V

Note :

1. Repetitive Rating : Pulse width limited by maximum junction temperature.2
2. Surface Mounted on FR4 Board, t≤5 sec.
3. Pulse Test : Pulse Width≤300μs, Duty Cycle≤ 2%.
4. Guaranteed by design, not subject to production testing.

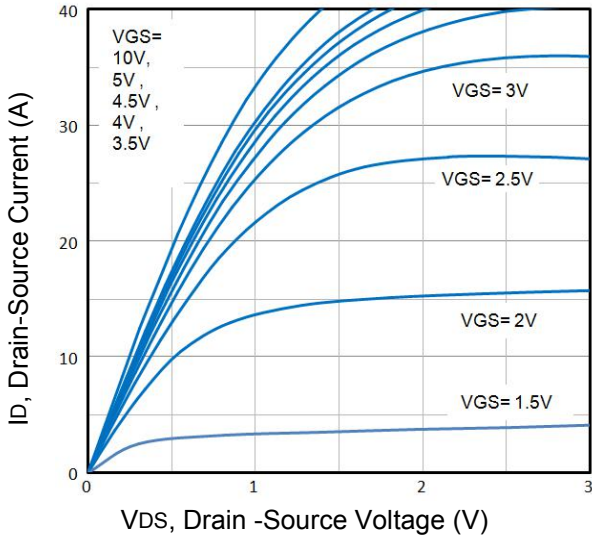


Fig1. Typical Output Characteristics

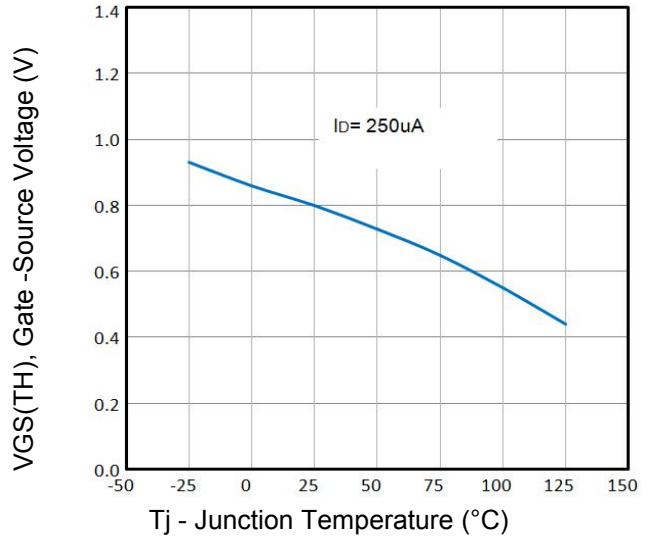


Fig2. Normalized Threshold Voltage Vs. Temperature

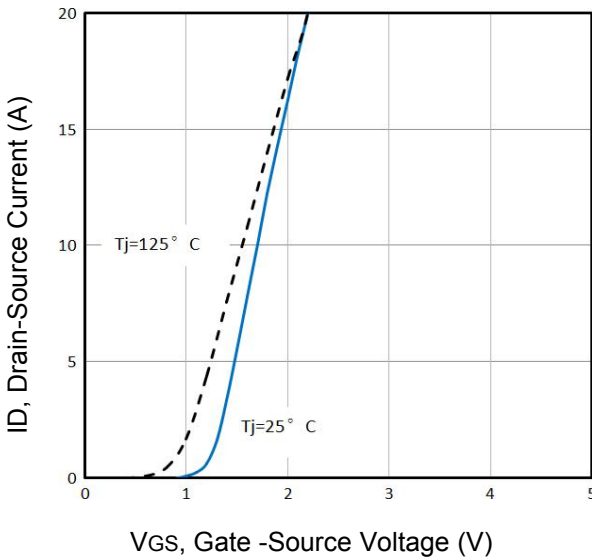


Fig3. Typical Transfer Characteristics

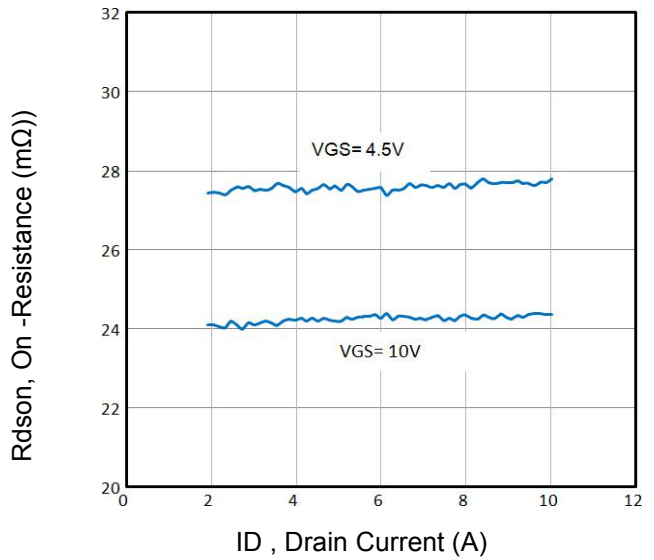


Fig4. On-Resistance vs. Drain Current and VGS

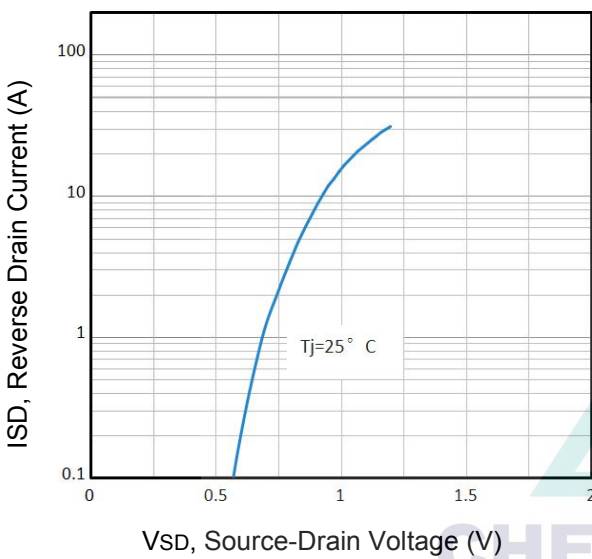


Fig5. Typical Source-Drain Diode Forward Voltage

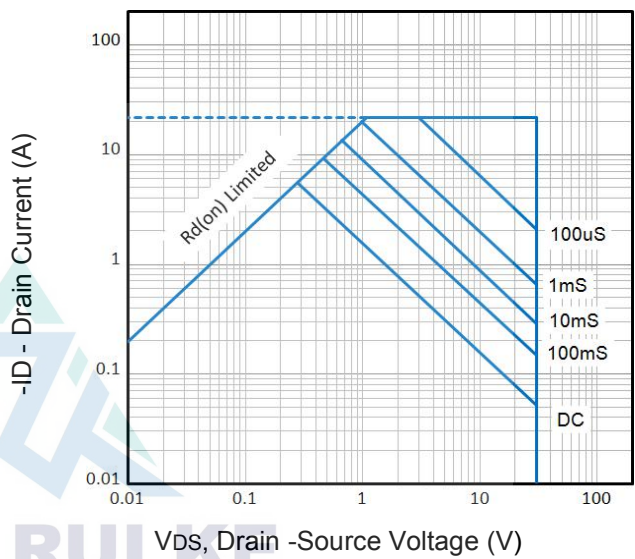
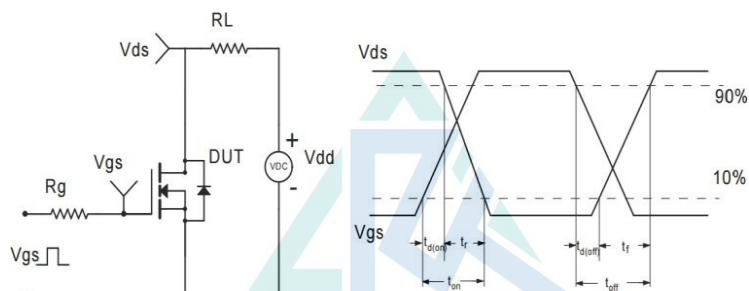
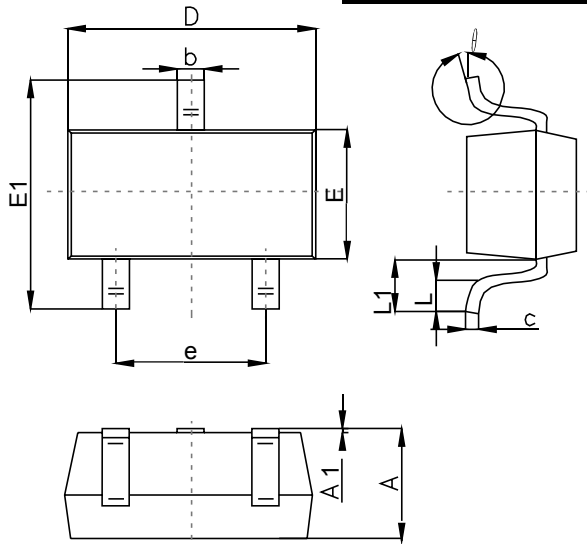


Fig6. Maximum Safe Operating Area

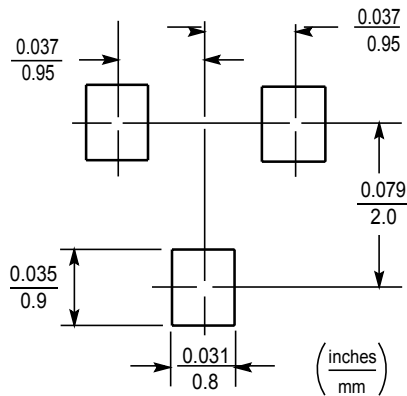


SOT-23 Package Outline Dimensions



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: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.