Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-40V	28mΩ@-10V	-6A
	38mΩ@-4.5V	

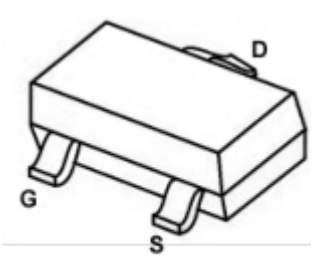
Feature

- High Cell Density Trenched P-ch MOSFETs
- Excellent RDSON
- Low Gate Charge

Applications

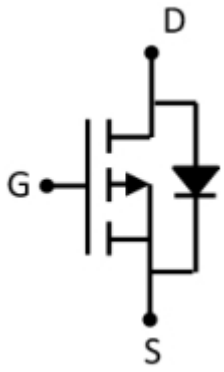
- Power Switching Application
- Hard Switched and High Frequency Circuits
- DC-DC Converter

Package

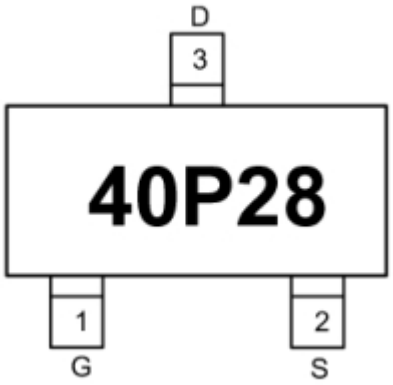


SOT-23-3L

Circuit diagram



Marking



Absolute maximum ratings

(T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-40	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current[1]	I_D	-6	A
Pulsed Drain Current[2]	I_{DM}	-24	A
Single Pulse Avalanche Energy[3]	E_{AS}	40	mJ
Avalanche Current	I_{AS}	-27	A
Power Dissipation[4]	P_D	1.0	W
Thermal Resistance from Junction to Ambient[1]	$R_{\theta JA}$	125	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55 To 150	℃

Electrical characteristics

(T_A=25℃, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$BV_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-40			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =-32V, V_{GS} = 0V			-1	uA
Gate-Source Leakage	I_{GSS}	V_{GS} =±20V, V_{DS} =0V			±100	uA
Gate-Source Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-1.2	-1.5	-2.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} =-10V, I_D =-5A		28	35	mΩ
		V_{GS} =-4.5V, I_D =-4A		38	50	
Forward Transconductance	g_{FS}	V_{DS}=-5V,I_D=-8A		12		S
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=-15V, V_{GS}=0V, f=1MHz		1415		pF
Output Capacitance	C_{oss}			134		
Reverse Transfer Capacitance	C_{rss}			102		
Switching Characteristics						
Total Gate Charge@-4.5V	Q_g	V_{DS} =-15V, , I_D=-4.5A, I_D =-1A		11.5		nC
Gate-Source Charge	Q_{gs}			3.5		
Gate-Drain Charge	Q_{gd}			3.3		
Turn-on Delay Time	$T_{d(on)}$	V_{DD}=-15V, V_{GS}=-10V, R_G=3.3Ω, I_D =-1A		22		nS
Turn-on Rise Time	T_r			15.7		
Turn-off Delay Time	$T_{d(off)}$			59		
Turn-off Fall Time	T_f			5.5		
Drain-Source Diode Characteristics						
Continuous Source Current	I_S	V_G=V_D=0V,Force Current			-7	A
Diode Forward Voltage	V_{SD}	V_{GS}=0V,I_S=-1A, T_J=25℃			-1.2	V

Notes:

1. The data tested by surface mounted on a 1 inch2 FR-4 board with 2OZ copper.
2. The data tested by pulsed , pulse width≦300us , duty cycle≦2%
3. The E AS data shows Max. rating . The test condition is V_{DD} =-25V,V_{GS} =-10V,L=0.1mH,I_{AS} =-27A
4. The power dissipation is limited by 150℃ junction temperature
5. The data is theoretically the same as I D and I DM , in real applications , should be limited by total power dissipation.

Typical Characteristics

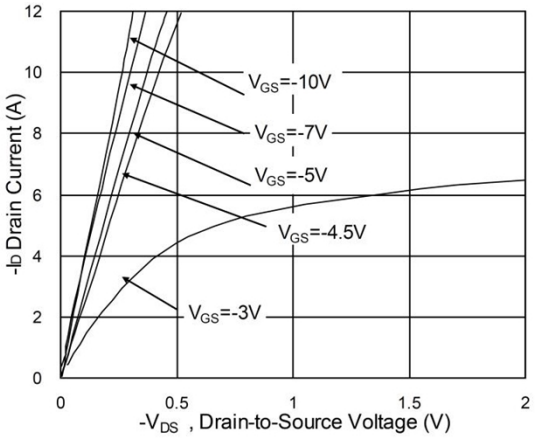


Fig.1 Typical Output Characteristics

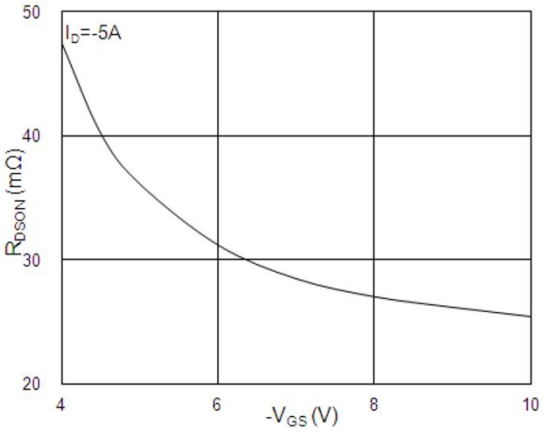


Fig.2 On-Resistance vs. Gate-Source Voltage

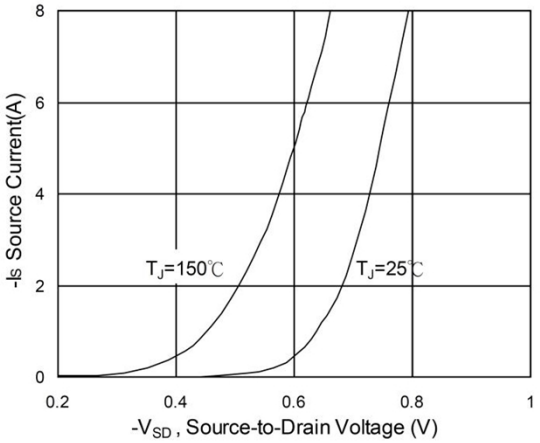


Fig.3 Forward Characteristics of Reverse

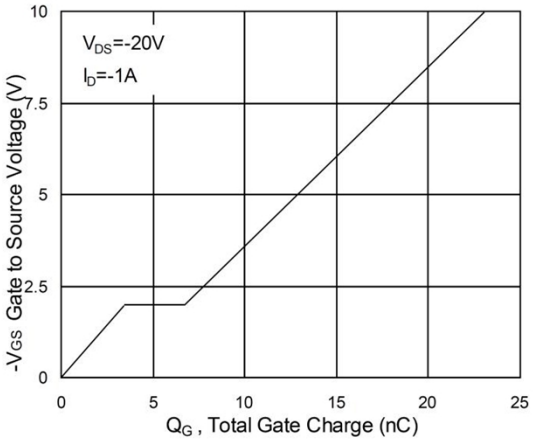


Fig.4 Gate Charge Characteristics

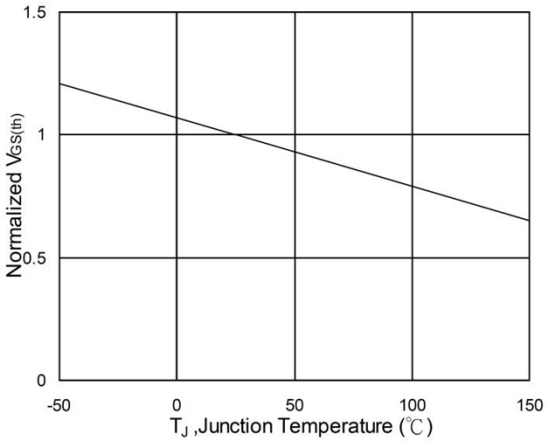


Fig.5 Normalized $V_{GS(th)}$ vs. T_J

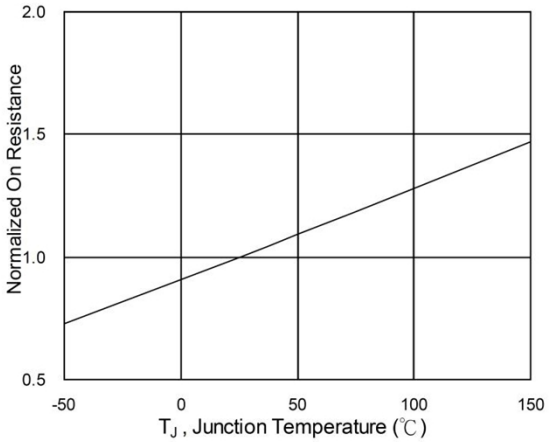


Fig.6 Normalized R_{DSON} vs. T_J

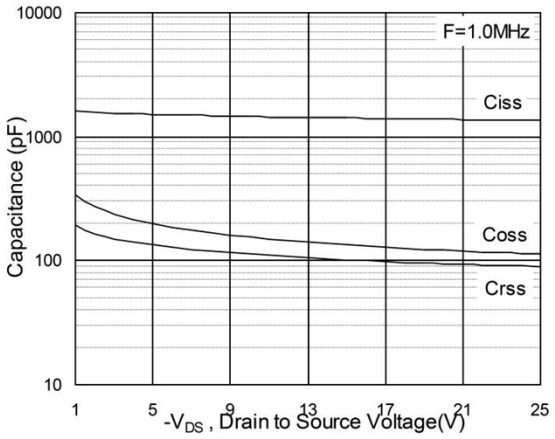


Fig.7 Capacitance

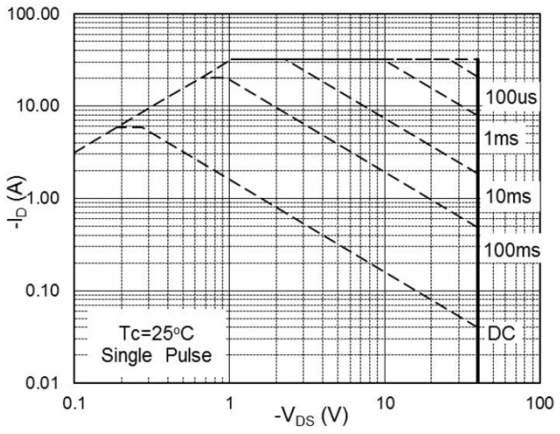


Fig.8 Safe Operating Area

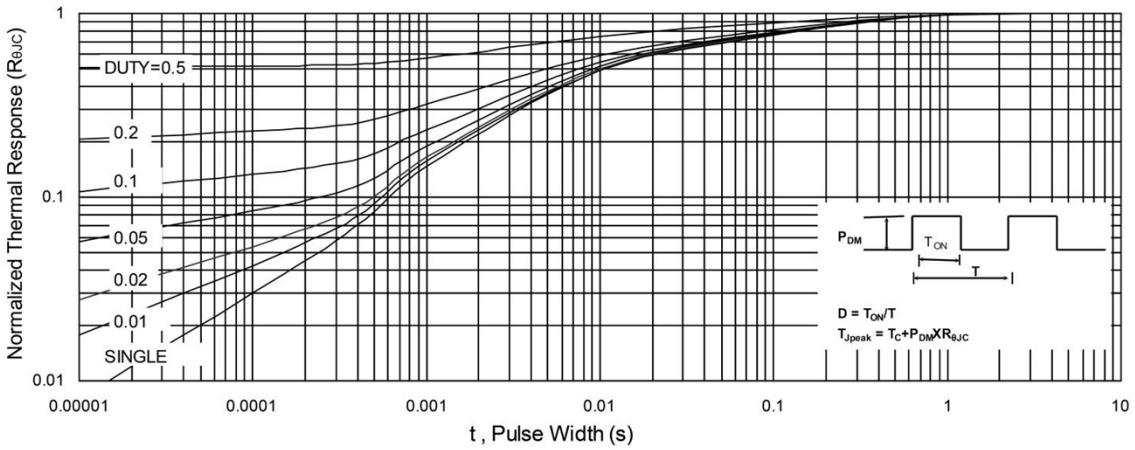
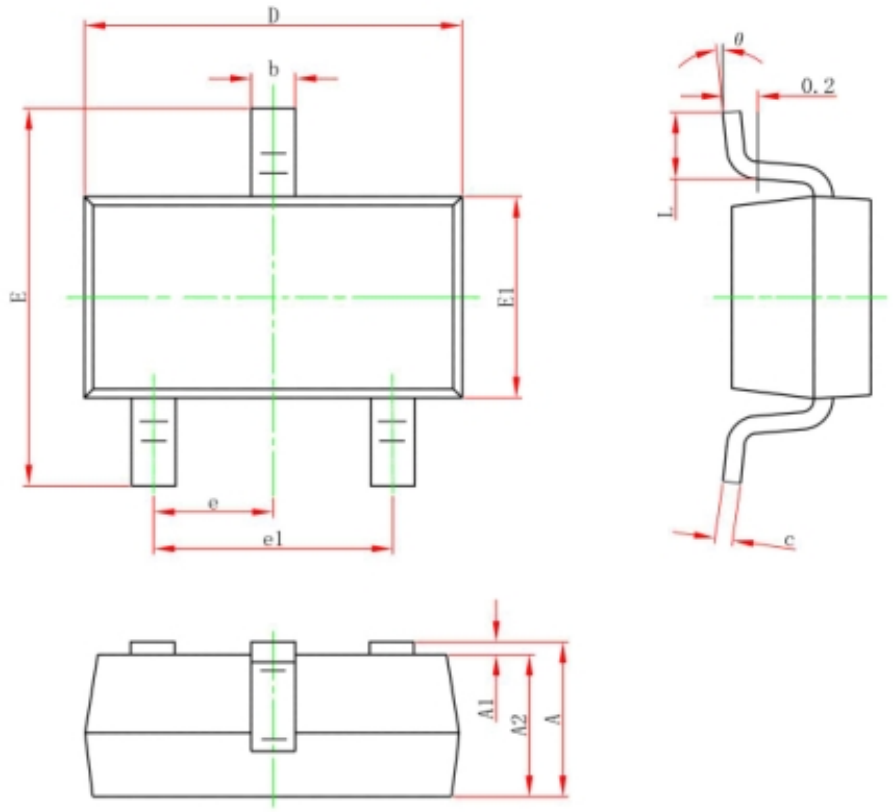


Fig.9 Normalized Maximum Transient Thermal Impedance

SOT-23-3L Package Information



Symbol	Dimensions in millimeters	
	Min.	Max.
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
b	0.300	0.500
c	0.100	0.200
D	2.820	3.020
E1	1.500	1.700
E	2.650	2.950
e	0.950 Typ.	
e1	1.800	2.000
L	0.300	0.600
θ	0°	8°