

Product Summary

BVDSS	R_{DS(on)}	I_D
-100V	750mΩ	-1 A

Application

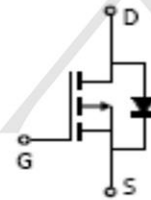
- Load/Power Switching
- Interfacing Switching
- Logic Level Shift

Package and Pin Configuration

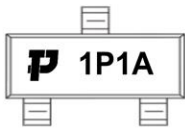
SOT-23



Circuit diagram



Marking:



“P” is TECHPUBLIC LOGO

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

PARAMETER		SYMBOL	LIMIT	UNITS
Drain-Source Voltage		V _{DS}	-100	V
Gate-Source Voltage		V _{GS}	+20	
Continuous Drain Current (Note 4)	T _A =25°C	I _D	-1	A
	T _A =70°C		-0.75	
Pulsed Drain Current (Note 1)		I _{DM}	-3.6	
Power Dissipation	T _A =25°C	P _D	1.25	W
	T _A =70°C		0.8	
Single Pulse Avalanche Energy (Note 6)		E _{AS}	0.2	mJ
Operating Junction and Storage Temperature Range		T _J , T _{STG}	-55~150	°C
Typical Thermal resistance		R _{θJA}	100	°C/W
- Junction to Ambient (Note 4,5)				

Electrical Characteristics ($T_J=25\text{ }^\circ\text{C}$, unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=-250\mu A$	-100	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1	-2	-2.5	
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-0.9A$	-	500	650	m Ω
		$V_{GS}=-4.5V, I_D=-0.45A$	-	620	750	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-80V, V_{GS}=0V$	-	-	-1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
Dynamic (Note 7)						
Total Gate Charge	Q_g	$V_{DS}=-50V, I_D=-1A,$ $V_{GS}=-10V$ (Note 2,3)	-	8	-	nC
Gate-Source Charge	Q_{gs}		-	1.8	-	
Gate-Drain Charge	Q_{gd}		-	1.4	-	
Input Capacitance	C_{iss}	$V_{DS}=-15V, V_{GS}=0V,$ $f=1MHz$	-	448	-	pF
Output Capacitance	C_{oss}		-	28	-	
Reverse Transfer Capacitance	C_{rss}		-	21	-	
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=-50V, I_D=1A,$ $V_{GS}=-10V, R_G=6.2\Omega$ (Note 2,3)	-	3.7	-	ns
Turn-On Rise Time	t_r		-	25	-	
Turn-Off Delay Time	$t_{d(off)}$		-	21	-	
Turn-Off Fall Time	t_f		-	22	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I_S	---	-	-	-1.5	A
Diode Forward Voltage	V_{SD}	$I_S=-1A, V_{GS}=0V$	-	-0.82	-1.2	V



Typical Electrical and Thermal Characteristics

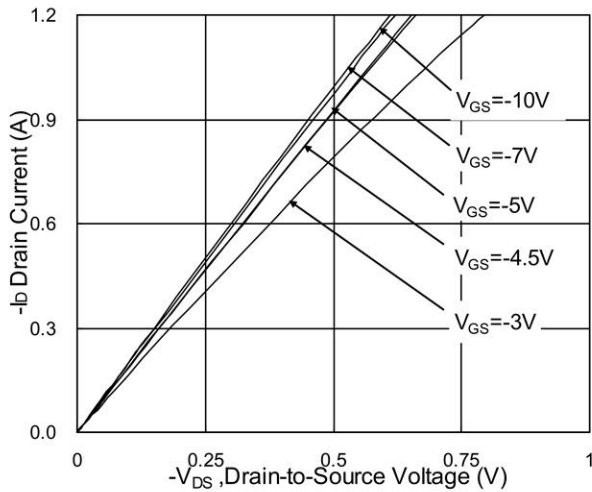


Fig.1 Typical Output Characteristics

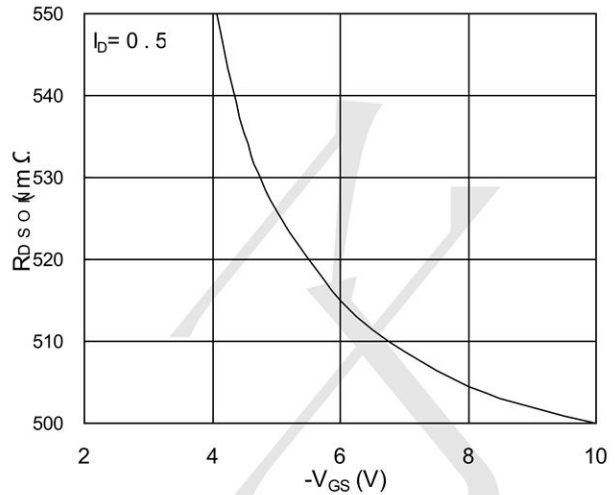


Fig.2 On-Resistance vs. Gate-Source

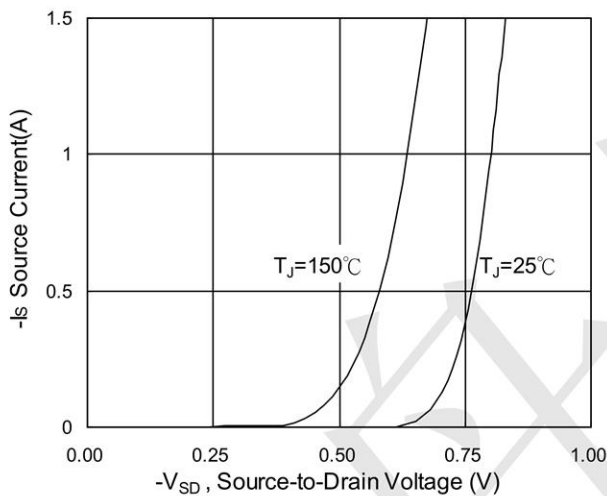


Fig.3 Forward Characteristics Of Reverse

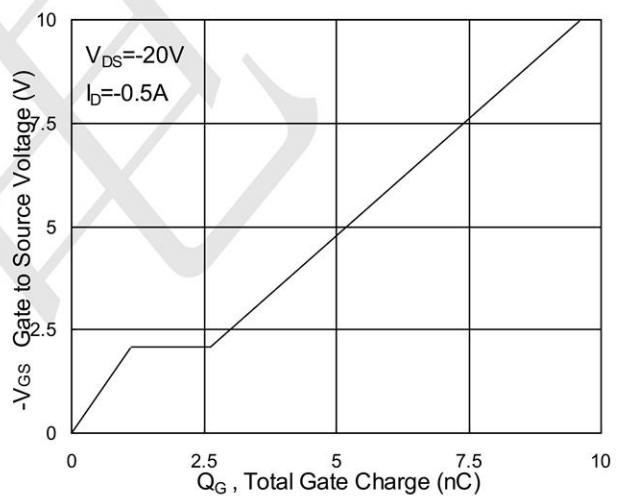


Fig.4 Gate-Charge Characteristics

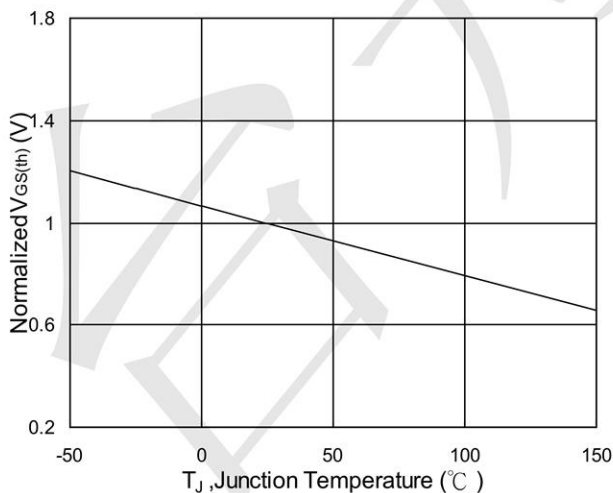


Fig.5 Normalized $V_{GS(th)}$ vs. T_J

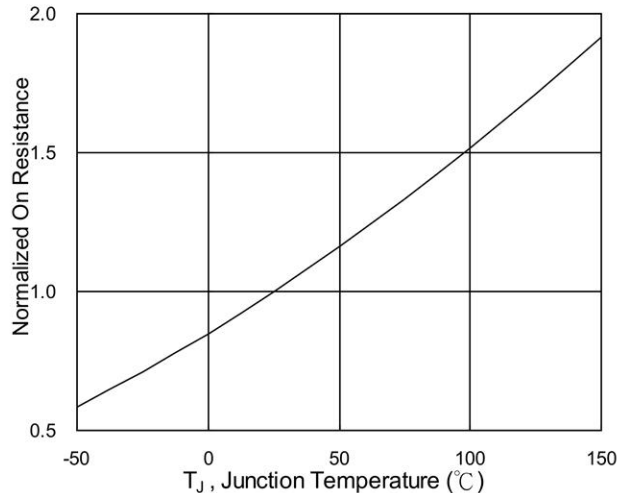


Fig.6 Normalized $R_{DS(on)}$ vs. T_J

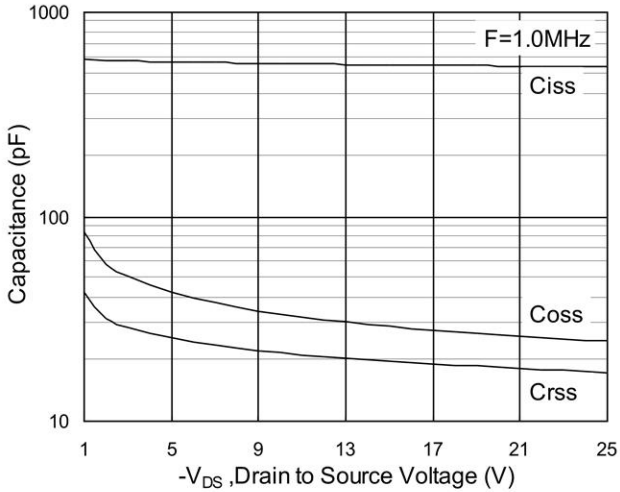


Fig.7 Capacitance

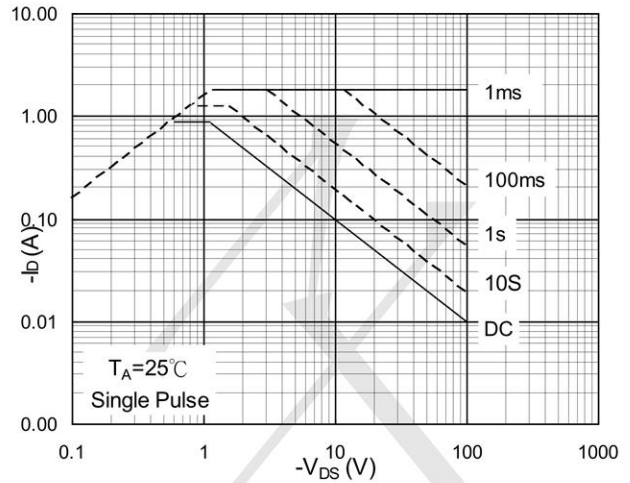


Fig.8 Safe Operating Area

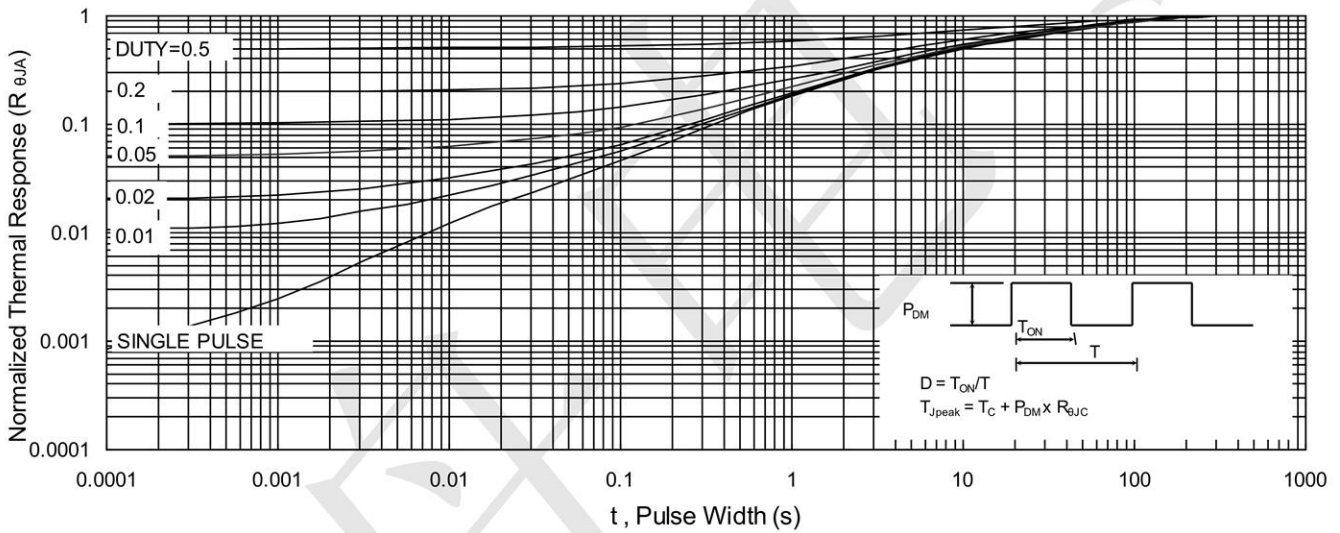


Fig.9 Normalized Maximum Transient Thermal Impedance

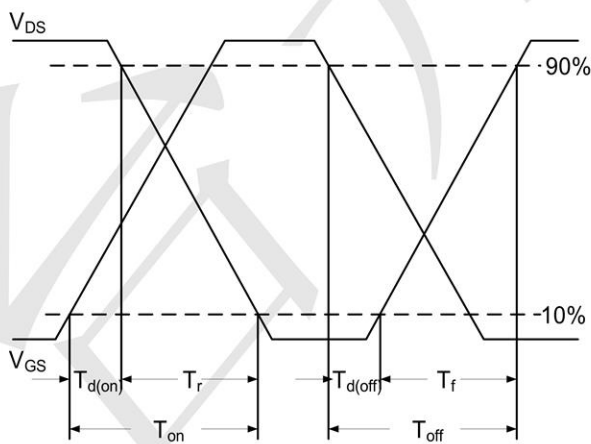


Fig.10 Switching Time Waveform

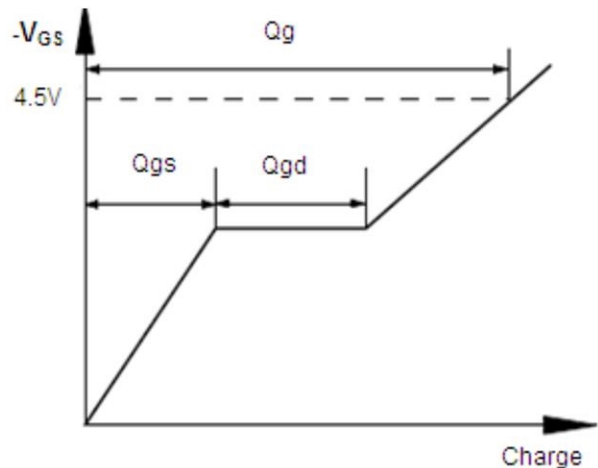
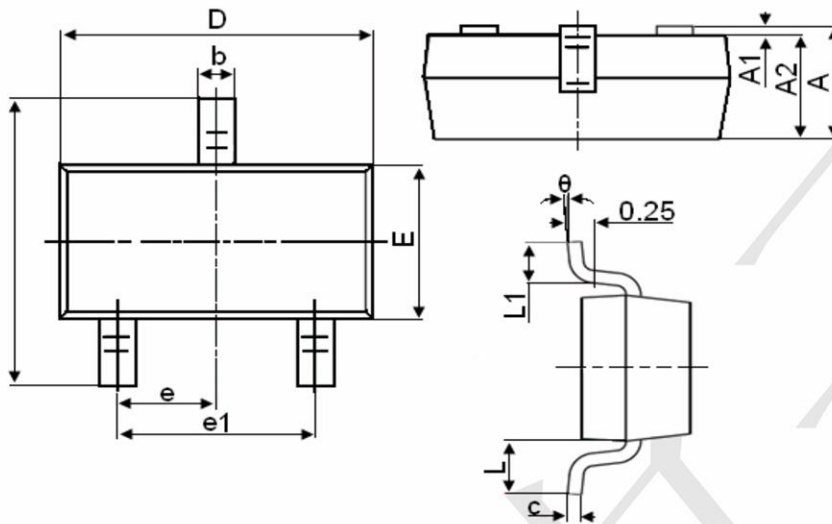


Fig.11 Gate Charge Waveform



SOT-23 Package Information



Symbol	Dimensions in Millimeters	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°