preliminary

CMY9702PL-23S

20V P-Channel Fast Switching MOSFET

Features

- Trench Power LV MOSFET technology
- High Speed switching
- 100% EAS Guaranteed
- Green product

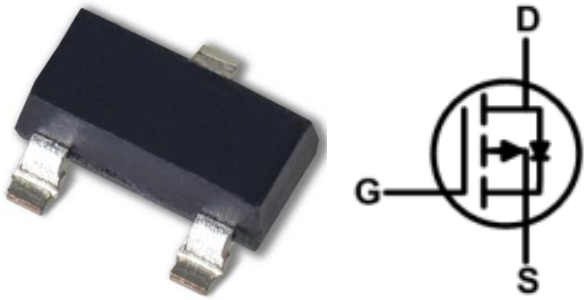
Product Summary

Item	Typical Value	Unit
V_{DS} @ T_{JMAX}	-20	V
$R_{DS(on)}$ @ V_{GS} =-4.5V (Max)	75	mΩ
I_D	-3.1	A

Applications

- Portable Equipment
- Battery Powered System

SOT23S Pin Configuration



Absolute Ratings (T_A = 25℃ unless otherwise noted)

Parameter	Symbol	Value	Units
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±12	V
Pulse Drain Current Tested	I_{DM}	-15.5	A
Continuous Drain Current, T_C = 25°C/100°C	I_D	-3.1/-2.5	A
Maximum Power Dissipation	P_D	1	W
Junction Temperature Maximum	T_{JMAX}	150	°C
Storage Temperature	$T_{Storage}$	-55 to 150	°C

Thermal Characteristics

Parameter	Symbol	Value(Max)	Units
Thermal Resistance Junction to ambient	$R_{\theta JA}$	125	°C/W

Electrical Characteristics

Static (T_J=25℃ unless otherwise specified)						
Parameter	**Symbol**	**Test Conditions**	**Min.**	**Typ.**	**Max.**	**Units**
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS} = 0V, I_D = -250uA	-20	---	---	V
Gate-Source Leakage	I_{GSS}	V_{GS} = ± 12V, V_{DS} = 0V	---	---	± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -16V, V_{GS} = 0V	---	---	-1	uA
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS} = -4.5V, I_D = -3A	---	---	75	mΩ
		V_{GS} = -2.5V, I_D = -2A	---	---	105	
Gate-Source Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250uA	-0.5	---	-1.2	V
Continuous Source Current	I_S	V_G = V_D = 0V, Force Current	---	---	-3.1	A
Diode Forward Voltage	V_{SD}	IS = 1A, VGS = 0V	---	---	-1	V
Dynamic (T_J=25℃ unless otherwise specified)						
Parameter	**Symbol**	**Test Conditions**	**Min.**	**Typ.**	**Max.**	**Units**
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = -15 V, f = 1MHz	---	686	---	pF
Output Capacitance	C_{oss}		---	90.8	---	
Reverse Transfer Capacitance	C_{rss}		---	80.4	---	
Total Gate Charge	Q_g	V_{DS} = -15V, I_D = -3A, V_{GS} = -4.5 V	---	9.7	---	nC
Gate-Source Charge	Q_{gs}		---	2.05	---	
Gate-Drain Charge	Q_{gd}		---	2.43	---	
Turn-on delay time	$T_{d(on)}$	V_{DD} = -10V, I_D = -3A, V_{GS} = -4.5V, R_G=3.3Ω	---	4.8	---	nS
Rise time	T_r		---	9.6	---	
Turn-off delay time	$T_{d(off)}$		---	52	---	
Fall time	T_f		---	8.4	---	

Typical Characteristics

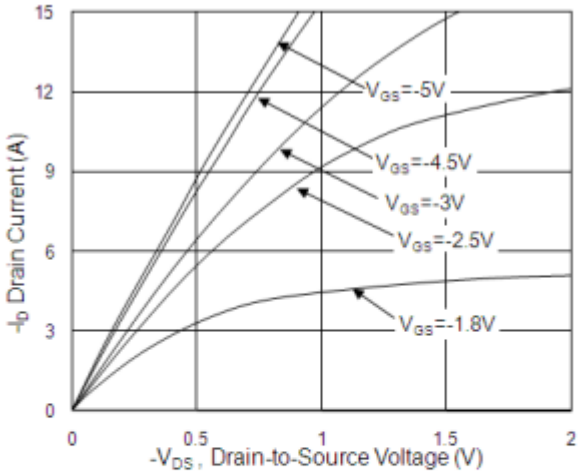


Fig.1 Typical Output Characteristics

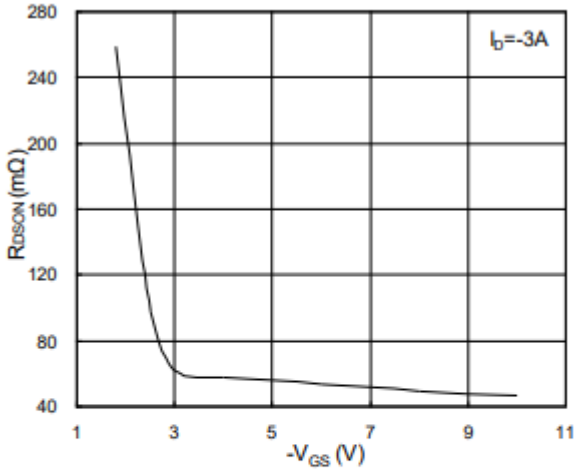


Fig.2 On-Resistance vs. Gate-Source

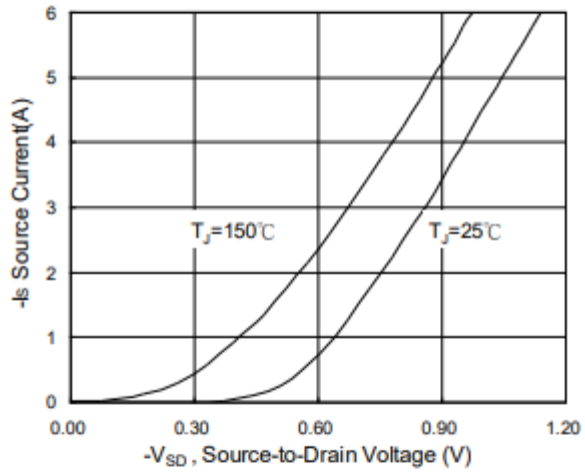


Fig.3 Forward Characteristics Of Reverse

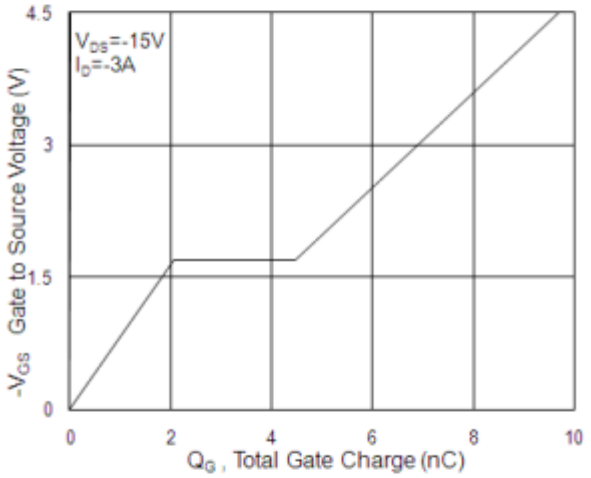


Fig.4 Gate-Charge Characteristics

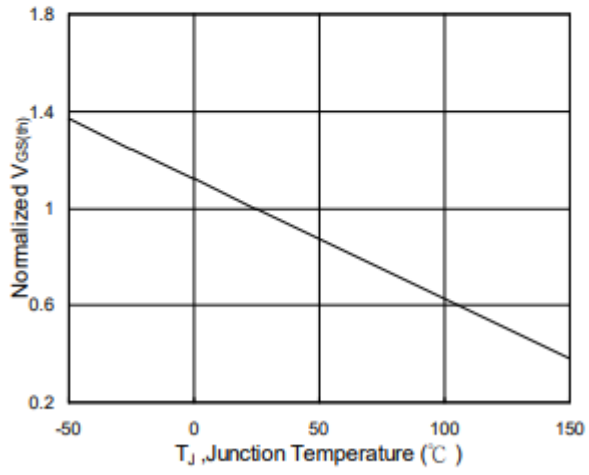


Fig.5 Normalized $V_{GS(th)}$ vs. T_J

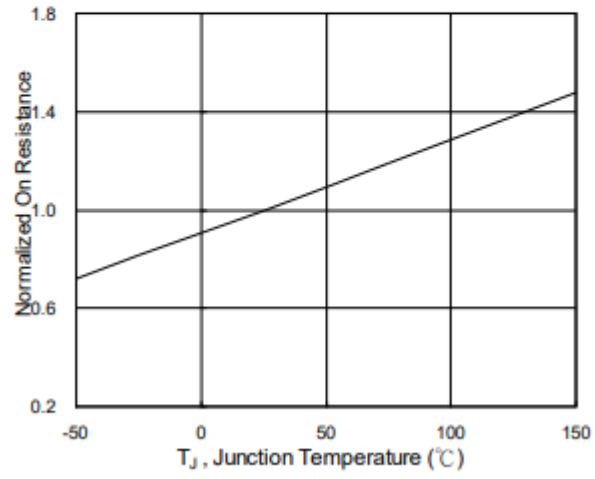


Fig.6 Normalized R_{DSON} vs. T_J

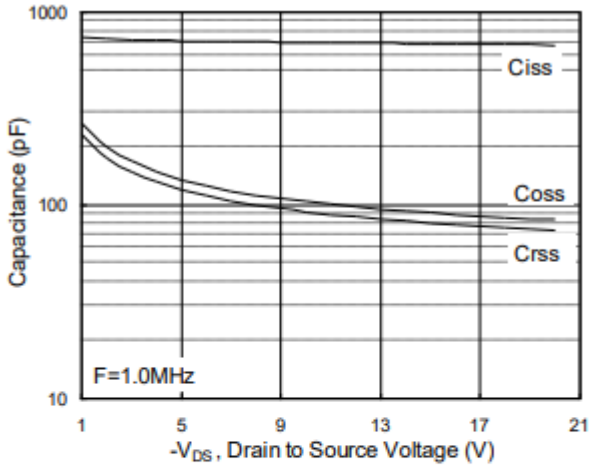


Fig.7 Capacitance

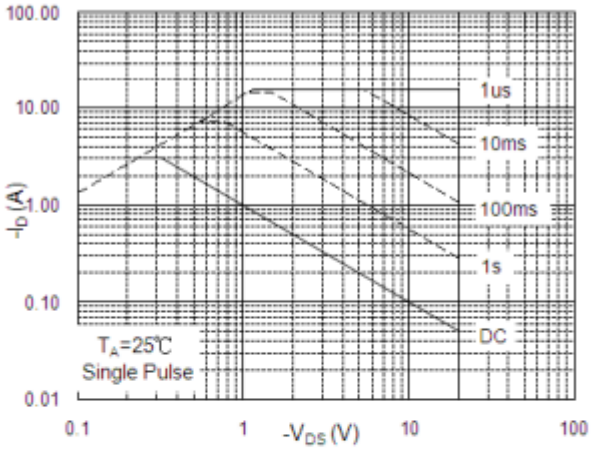


Fig.8 Safe Operating Area

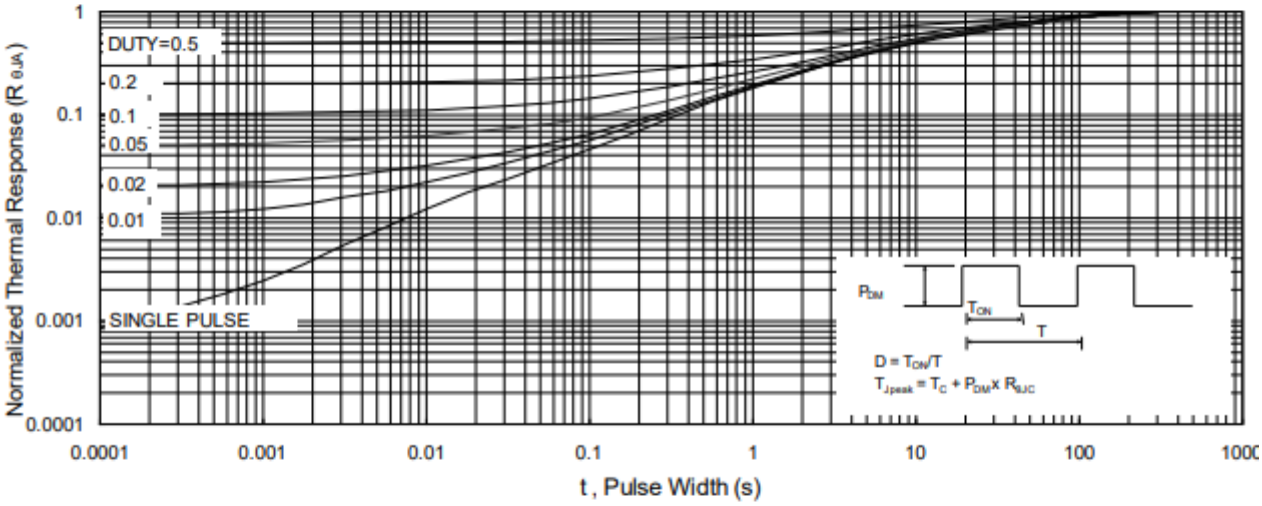


Fig.9 Normalized Maximum Transient Thermal Impedance

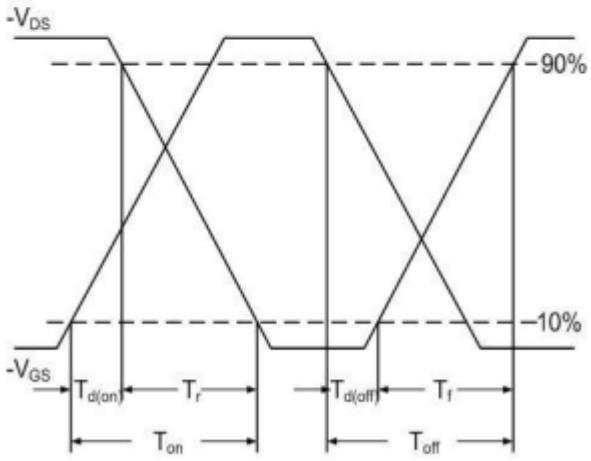


Fig.10 Switching Time Waveform

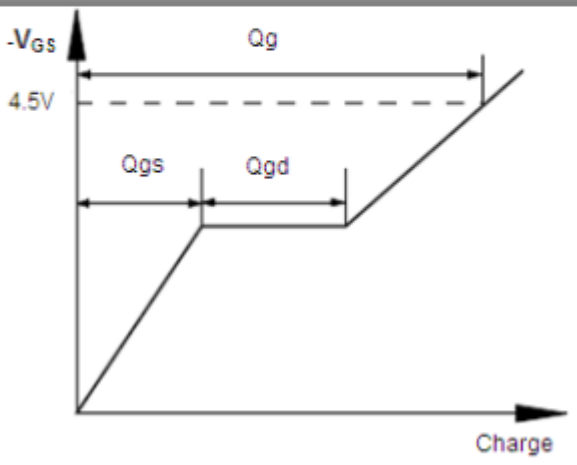
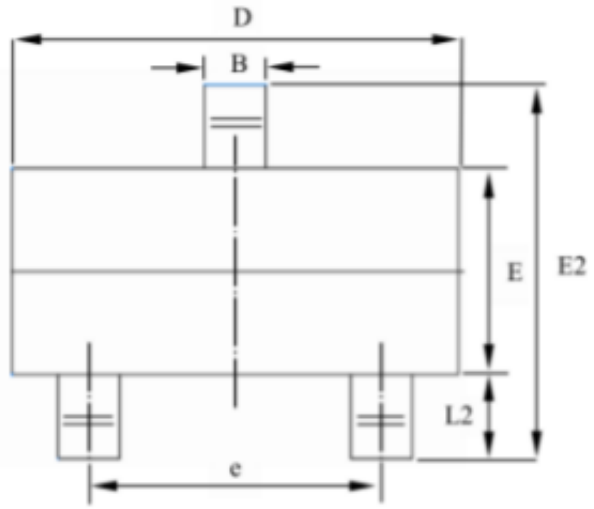
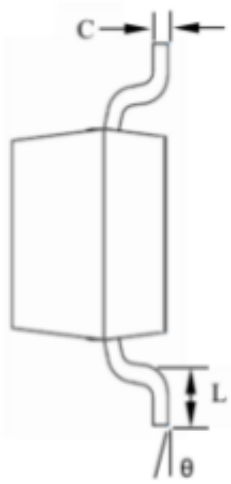
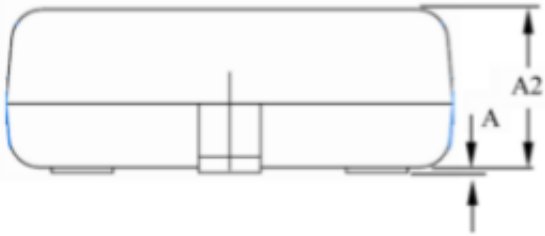


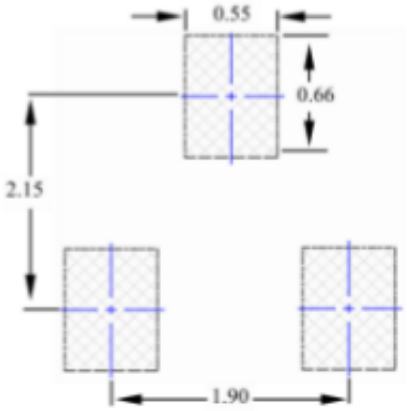
Fig.11 Gate Charge Waveform

SOT23S Package Outline Dimensions









LAND PATTERN RECOMMENDATION

SYMBOLS	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.00	--	0.10	0.000	--	0.004
A2	0.90	--	1.10	0.035	--	0.041
B	0.30	--	0.50	0.012	--	0.020
C	0.08	--	0.15	0.003	--	0.006
D	2.80	--	3.00	0.110	--	0.118
E	1.20	--	1.40	0.047	--	0.055
E2	2.25	--	2.55	0.089	--	0.100
L	0.30	--	0.50	0.012	--	0.020
L2	0.50	--	0.60	0.020	--	0.024
θ	0°	--	8°	0°	--	8°
e	1.80	--	2.00	0.071	--	0.079