

•General Description

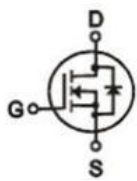

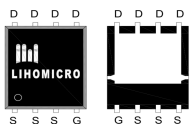
The SGT MOSFET LH062N100 has the low $R_{DS(on)}$, low gate charge, fast switching and excellent avalanche characteristics. This device is suitable for fast charge and lighting.

•Features

- Fast switching
- Low $R_{DS(on)}$ & FOM
- Low Miller Capacitance

•Application

- Lighting
- Power Supplies
- PD Fast Charging

	$V_{DS} = 100V$ $R_{DS(ON)} = 6.2m\Omega$ $I_D = 45A$
	
TO-252	DFN5*6

■ RoHS COMPLIANT

•Ordering Information:

Part Number	LH062N100	LH062N100
Package	TO-252	DFN5*6
Basic Ordering Unit (pcs)	2500	5000
Normal Package Material Ordering Code	LH062N100T5-TO252-TAP	LH062N100N-DFN5*6-TAP
Halogen Free Ordering Code	LH062N100T5-TO252-TAP-HF	LH062N100N-DFN5*6-TAP-HF

•Absolute Maximum Ratings (TC = 25°C)

PARAMETER	SYMBOL	Value	UNIT
Drain-Source Breakdown Voltage	BV_{DSS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current, $T_C = 25^\circ C$	I_D	45	A
Pulsed drain current (TC = 25°C, tp limited by Tjmax) ¹	I_D pulse	62.5	A
Single Pulse Avalanche Energy ²	E_{AS}	112	mJ
Power Dissipation (TC=25°C)	P_D	26.6	W
Operating Temperature	T_J	-55~+150	°C
Storage Temperature	T_{STG}	-55~+150	°C

●Electronic Characteristics

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0V, I_D = 250\mu A$	100	--	--	V
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.0	--	2.5	V
Drain-source On Resistance ³	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 20A$	--	5.8	6.2	mΩ
		$V_{GS} = 4.5V, I_D = 15A$	--	7.0	10	
Drain-Source Leakage Current	I_{DSS}	$V_{DS} = 100V, V_{GS} = 0V, T_J = 25^\circ C$	--	--	10	μA
		$V_{DS} = 100V, V_{GS} = 0V, T_J = 125^\circ C$	--	--	100	
Gate-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 20, V_{DS} = 0V$	--	--	±100	nA
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$	--	0.66	--	Ω
Forward Transconductance	g_{fs}	$V_{DS} = 5V, I_D = 20A$	--	34	--	S
Input Capacitance	C_{iss}	$V_{GS} = 0V,$ $V_{DS} = 50V$ $f = 1.0MHz$	--	2561	--	pF
Output Capacitance	C_{oss}		--	355	--	
Reverse transfer Capacitance	C_{rss}		--	13	--	
Turn-on delay time	$T_d(on)$	$V_{GS} = 10V,$ $I_D = 20.0A$ $R_G = 2.0\Omega$	--	10.4	--	ns
Rise time	T_r		--	21.7	--	
Turn -Off Delay Time	$T_d(off)$		--	40.5	--	
Fall time	T_f		--	29.1	--	
Total Gate Charge	Q_g	$I_D = 20A,$ $V_{DS} = 50V$ $V_{GS} = 10V$	--	56.2	---	nC
Gate-to-Source Charge	Q_{gs}		--	10.3	--	
Gate-to-Drain Charge	Q_{gd}		--	14.4	---	
Diode Forward Voltage	V_{SD}	$T_J = 25^\circ C, I_S = 20.0A$ $V_{GS} = 0V$	--	0.7	1.3	V
Reverse Recovery Time	t_{rr}	$I_f = I_S$ $di_F/dt = 100A/\mu s$	--	50.1	--	ns
Reverse Recovery Charge	Q_{rr}		--	81.3	--	μC
Peak Reverse Recovery Current	I_{RRM}		--	2.72	--	A

●Thermal Characteristics

PARAMETER	SYMBOL	MAX	UNIT
Thermal Resistance Junction-case	R_{thJC}	4.7	°C/W
Thermal Resistance Junction-ambient	R_{thJA}	54.5	°C/W

Notes:

- 1.Repetitive Rating: Pulse width limited by maximum junction temperature.
2. $I_{AS} = 15A, V_{DD} = 60V, R_G = 25\Omega, \text{Starting } T_J = 25^\circ C$
3. Pulse Test : Pulse width $\leq 300\mu s, \text{Duty cycle } \leq 2\%$

• Typical Characteristics

Fig.1 Output Characteristics

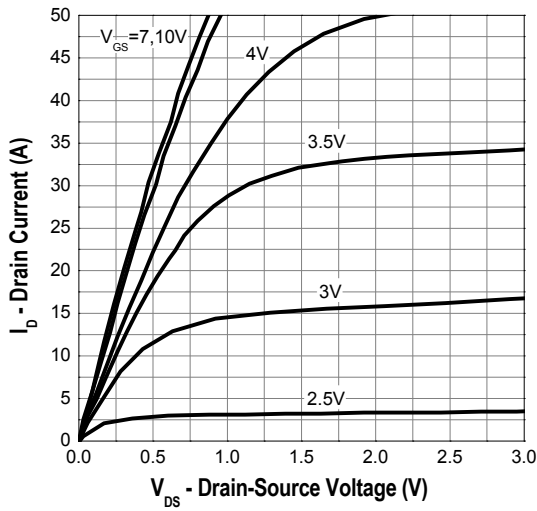


Fig.2 Gate Threshold Voltage

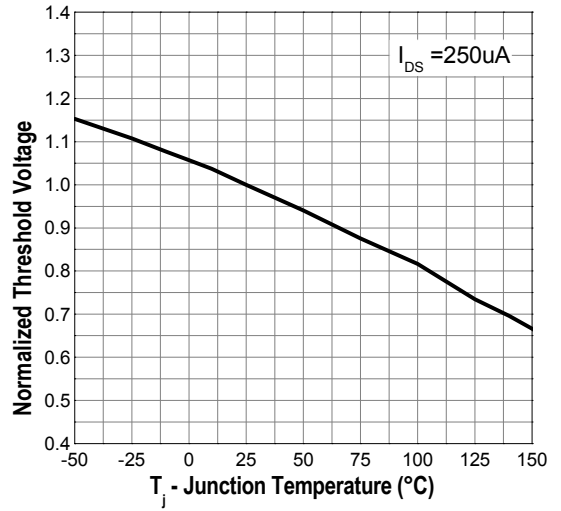


Fig.3 Gate-Source On Resistance

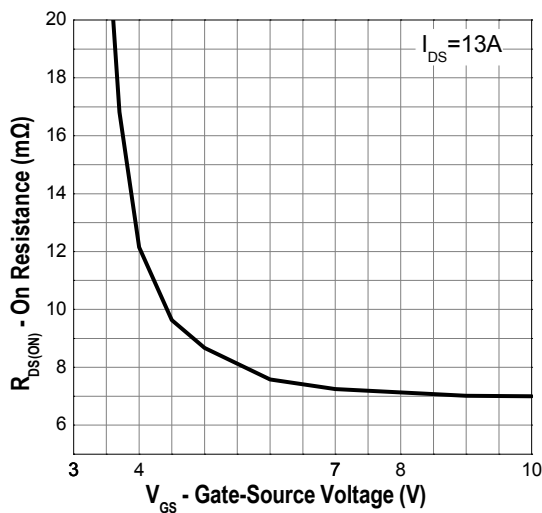


Fig.4 Drain-Source On Resistance

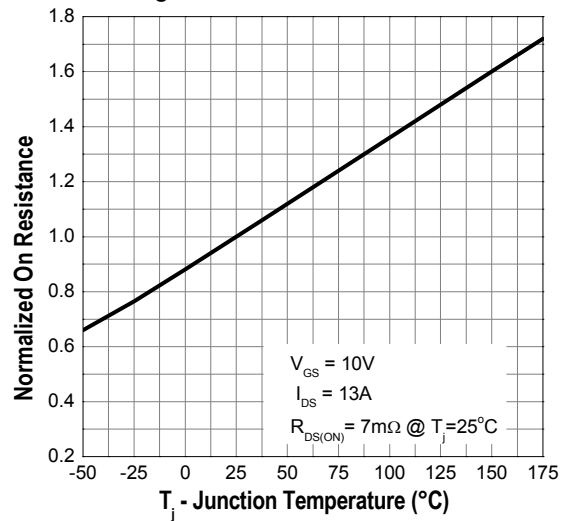


Fig.5 Drain-Source On Resistance

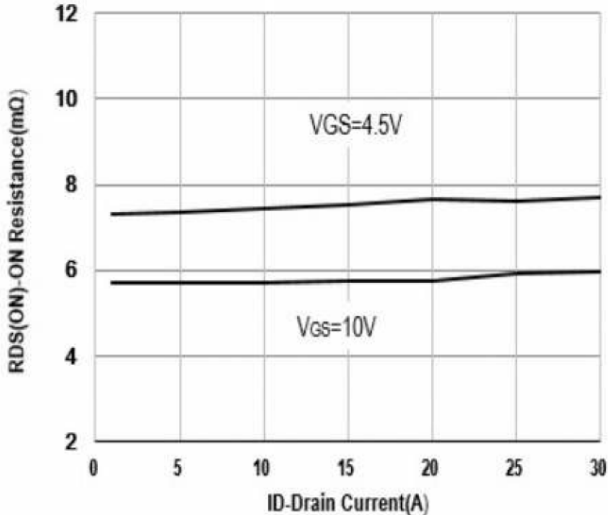
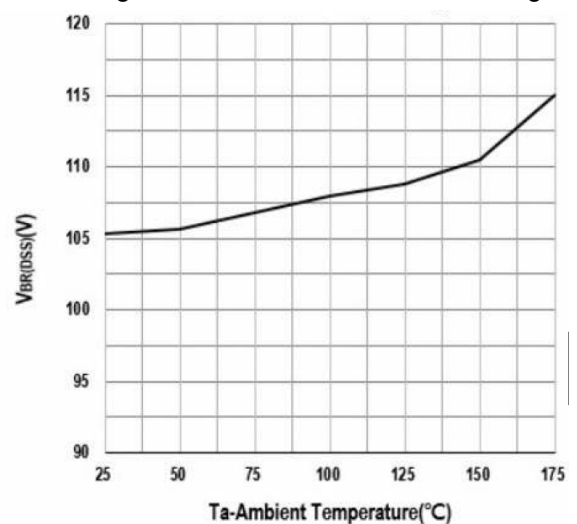


Fig.6 Drain-Source Breakdown Voltage



•Typical Characteristics(cont.)

Fig.7 Power Dissipation

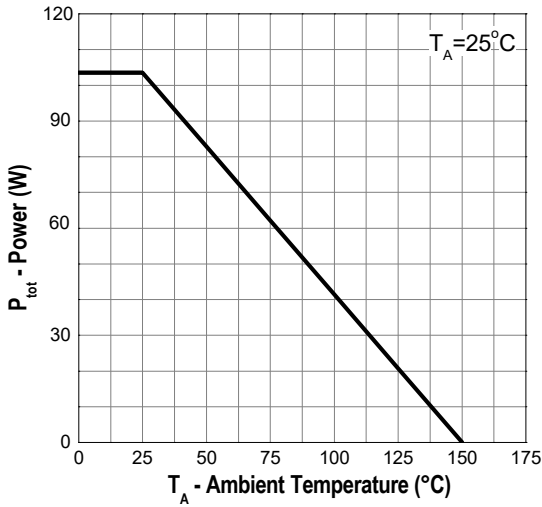


Fig.8 Drain Current

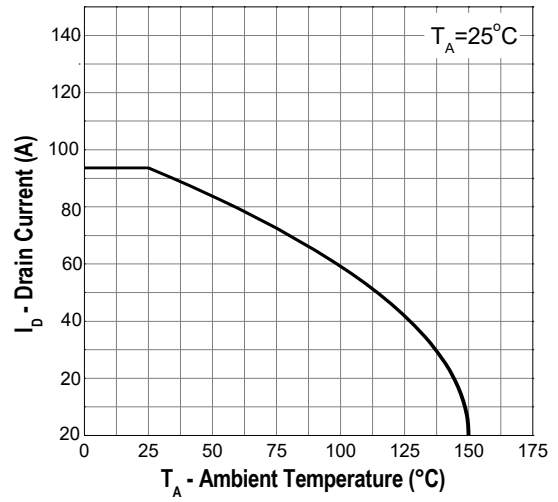


Fig.9 Safe Operation Area

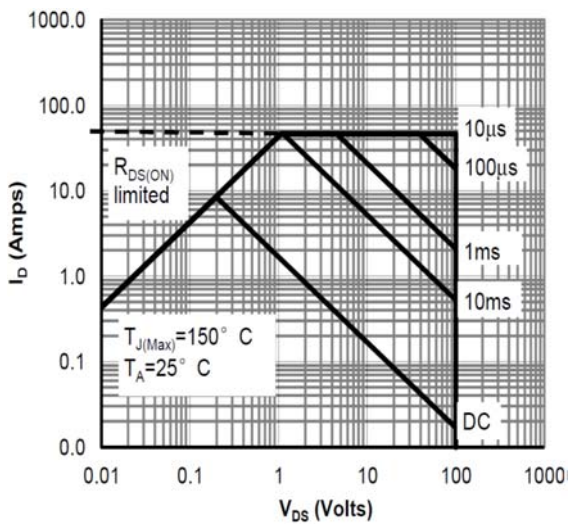


Fig.10 Transient Thermal Impedance

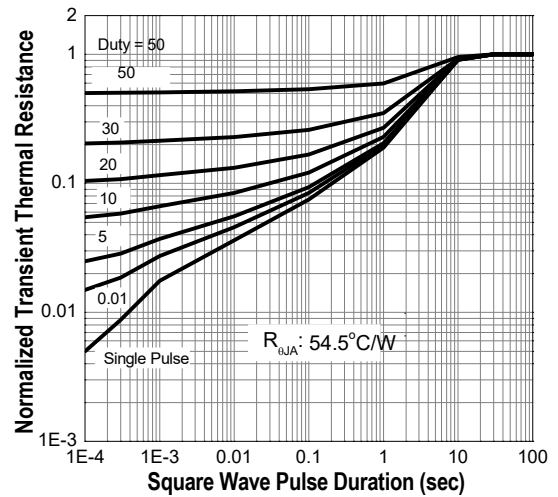


Fig.11 Capacitance

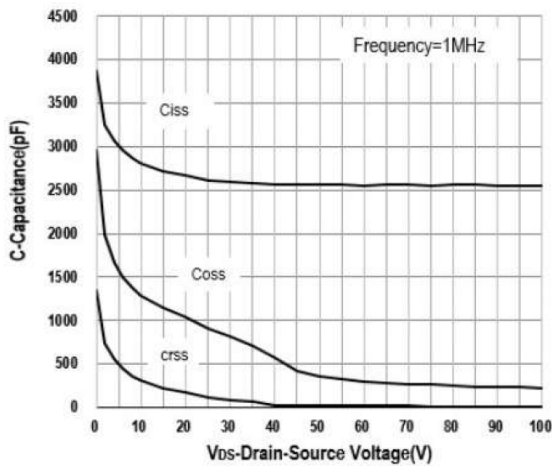
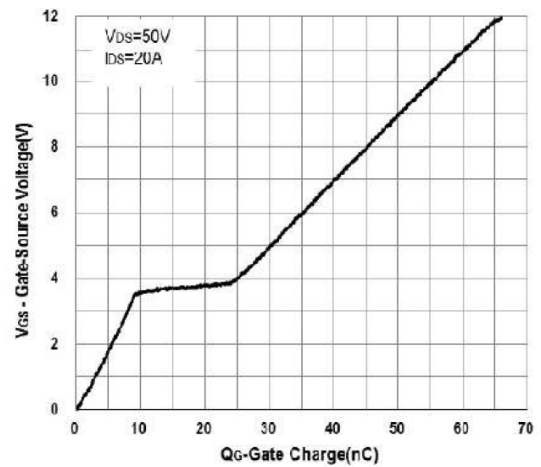


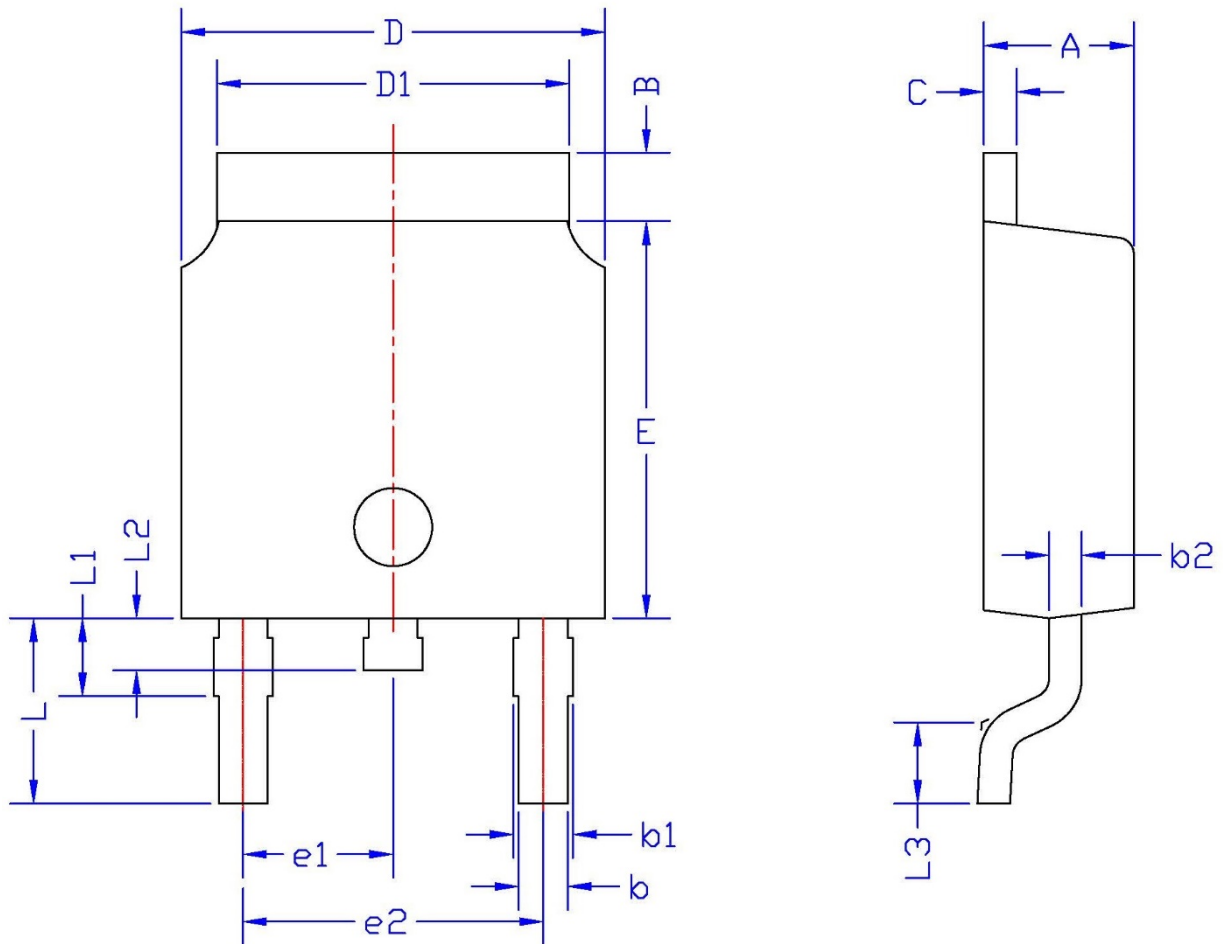
Fig.12 Gate Charge



●Dimensions (TO-252)

UNIT:mm

SYMBOL	min	max	SYMBOL	min	max
A	2.10	2.50	L2	0.60	1.20
b	0.50	0.90	L3	1.20	1.80
b1	0.70	1.20	B	0.80	1.30
b2	0.40	0.70	C	0.40	0.70
D	6.20	6.80	D1	5.10	5.60
E	5.80	6.40	e1	2.10	2.45
L	3.60	4.60	e2	4.40	4.80
L1	0.80	1.60			



•Dimensions (DFN5*6)

UNIT:mm

SYMBOL	min	max	SYMBOL	min	max
A	1.00	1.20	e	1.27BSC	
b	0.30	0.50	L	0.05	0.30
c	0.20	0.30	L1	0.40	0.80
D	4.80	5.20	L2	1.20	2.00
D1	3.90	4.30	H	3.30	3.80
E	5.50	5.90	I	-	0.18
E1	5.90	6.40			

