

**•General Description**

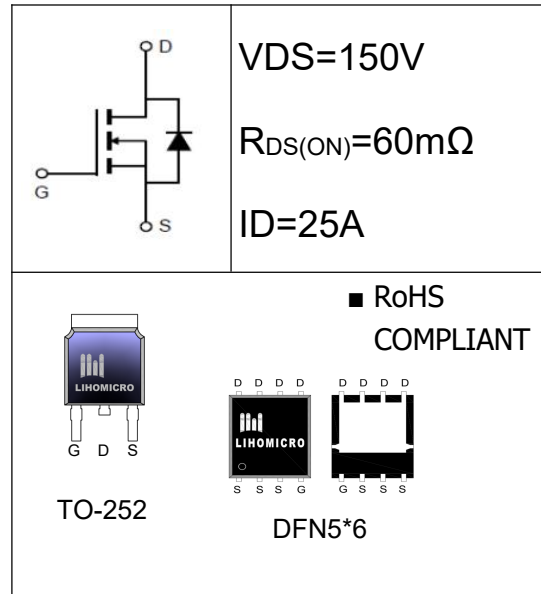
The MOSFET LH25N150 has the low  $R_{DS(on)}$ , low gate charge, fast switching and excellent avalanche characteristics. This device is suitable for power system and lighting.

**•Features**

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

**•Application**

- LED/LCD/PDP TV and monitor Lighting
- Power Supplies
- DC-DC Converter


**•Ordering Information:**

Part Number	LH25N150	LH25N150
Package	TO-252	DFN5*6
Basic Ordering Unit (pcs)	2500	5000
Normal Package Material Ordering Code	LH25N150T5-TO252-TAP	LH25N150N-DFN5*6-TAP
Halogen Free Ordering Code	LH25N150T5-TO252-TAP-HF	LH25N150N-DFN5*6-TAP-HF

**•Absolute Maximum Ratings (TC =25°C)**

PARAMETER	SYMBOL	Value	UNIT
Drain-Source Breakdown Voltage	$BV_{DSS}$	150	V
Gate-Source Voltage	$V_{GS}$	±20	V
Continuous Drain Current, $T_C = 25^\circ C$	$I_D$	25	A
Pulsed drain current ( $T_C = 25^\circ C$ , $t_p$ limited by $T_{jmax}$ ) <sup>1</sup>	$I_D$ pulse	93	A
Single Pulse Avalanche Energy <sup>2</sup>	$E_{AS}$	17	mJ
Power Dissipation( $T_C=25^\circ C$ )	$P_D$	90	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	$BV_{DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	150	--	--	V
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2	--	4	V
Drain-source On Resistance <sup>3</sup>	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 10A$	--	60	72	mΩ
Drain-Source Leakage Current	$I_{DSS}$	$V_{DS} = 120V, V_{GS} = 0V, T_J = 25^\circ C$	--	--	1	μA
		$V_{DS} = 100V, V_{GS} = 0V, T_J = 85^\circ C$	--	--	10	
Gate-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 20, V_{DS} = 0V$	--	--	±100	nA
Input Capacitance	$C_{iss}$	$V_{GS} = 0V,$ $V_{DS} = 50V$ $f = 1.0MHz$	--	3260	--	pF
Output Capacitance	$C_{oss}$		--	115	--	
Reverse transfer Capacitance	$C_{rss}$		--	55	--	
Turn-on delay time	$T_d(on)$	$V_{GS} = 50V,$ $I_D = 5A$ $R_G = 2.7\Omega$	--	33	--	ns
Rise time	$T_r$		--	22	--	
Turn -Off Delay Time	$T_d(off)$		--	96	--	
Fall time	$T_f$		--	51	--	
Total Gate Charge	$Q_g$	$I_D = 5A,$ $V_{DS} = 75V$ $V_{GS} = 4.5V$	--	37	--	nC
Gate-to-Source Charge	$Q_{gs}$		--	13.2	--	
Gate-to-Drain Charge	$Q_{gd}$		--	17.2	--	
Continuous Diode Forward Current	$I_S$	--	--	--	25	A
Pulsed Diode Forward Current	$I_{SM}$	--	--	--	93	A
Diode Forward Voltage	$V_{SD}$	$T_J = 25^\circ C, I_S = 5A$ $V_{GS} = 0V$	--	--	1.3	V

**●Thermal Characteristics**

PARAMETER	SYMBOL	MAX	UNIT
Thermal Resistance Junction-case	$R_{thJC}$	1.4	°C/W
Thermal Resistance Junction-ambient	$R_{thJA}$	62.5	°C/W

Notes:

- 1.Repetitive Rating: Pulse width limited by maximum junction temperature.
2.  $I_{AS} = 7A, V_{DD} = 50V, R_G = 25\Omega, \text{Starting } T_J = 25^\circ C$
3. Pulse Test : Pulse width ≤ 300μs, Duty cycle ≤ 2%

•Typical Characteristics

Fig1. On Resistance VS. Gate-to-Source Voltage

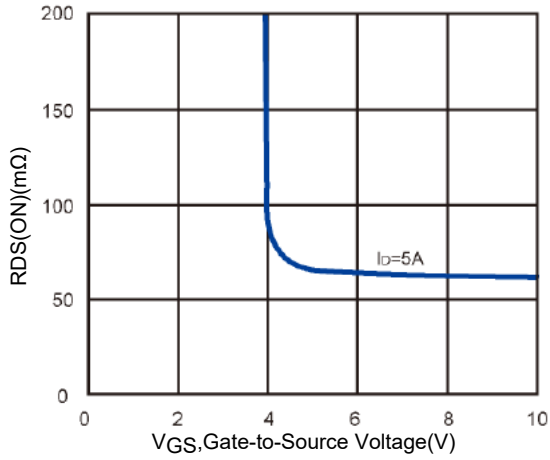


Fig2. On Resistance VS. Junction Temperature

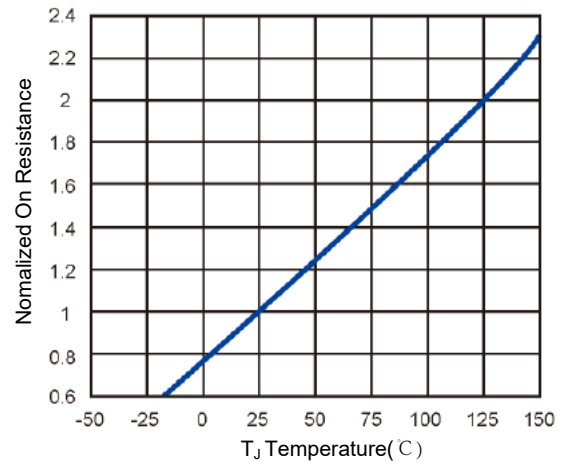


Fig3. On Resistance VS. Drain Current

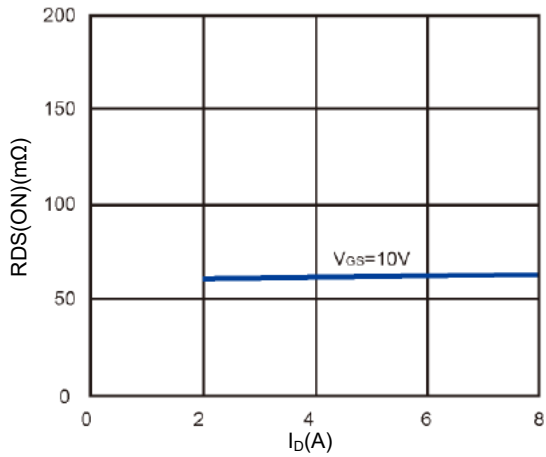


Fig3. On Region Characteristics

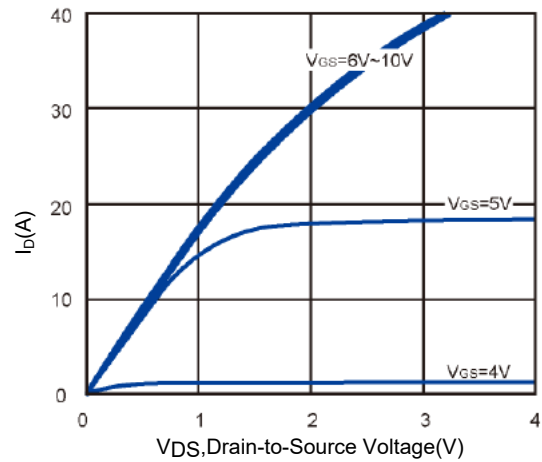


Fig5. Gate Charge

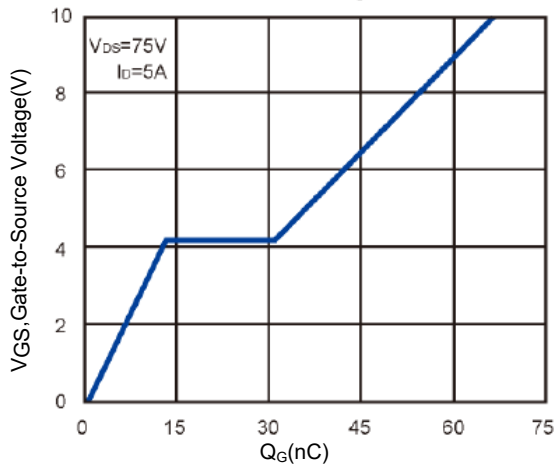
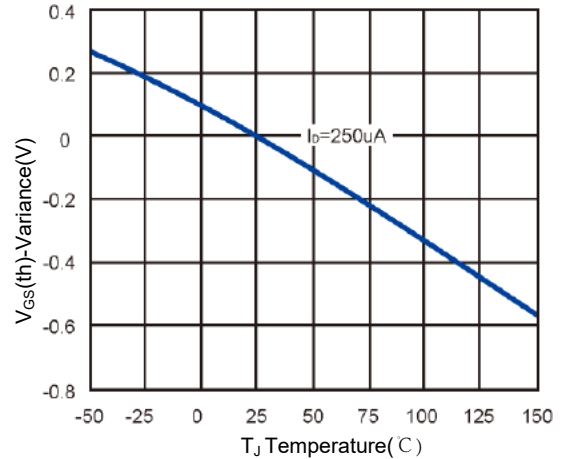
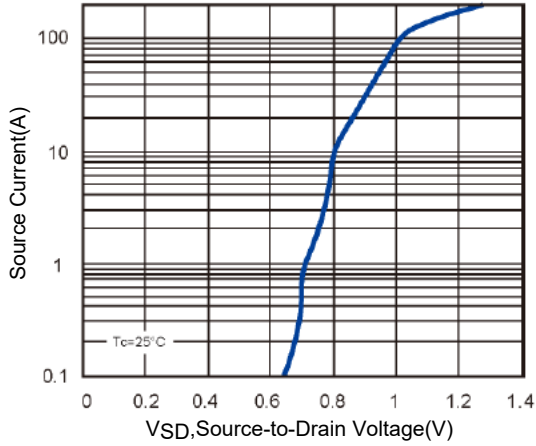


Fig6. Threshold Voltage

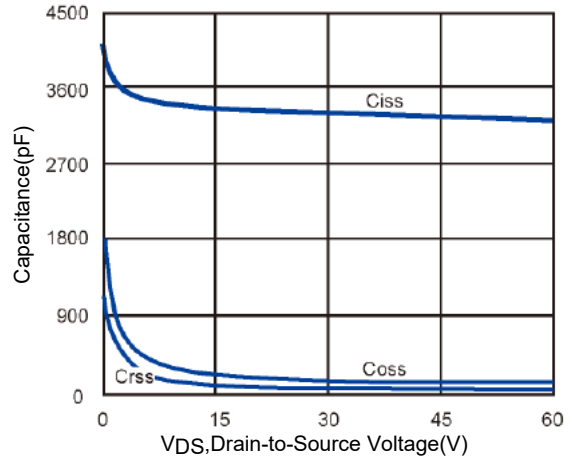


● **Typical Characteristics**(Cont.)

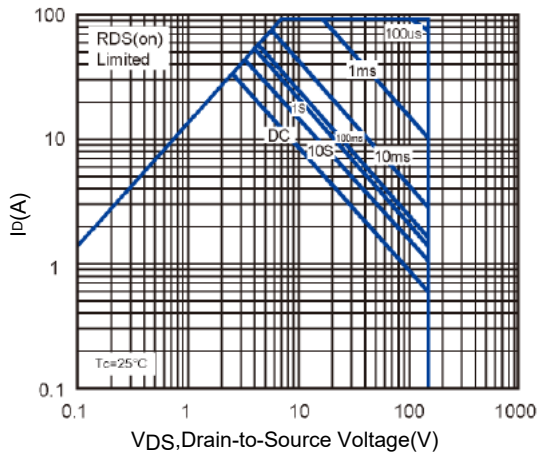
**Fig7. Body-Diode Characteristic**



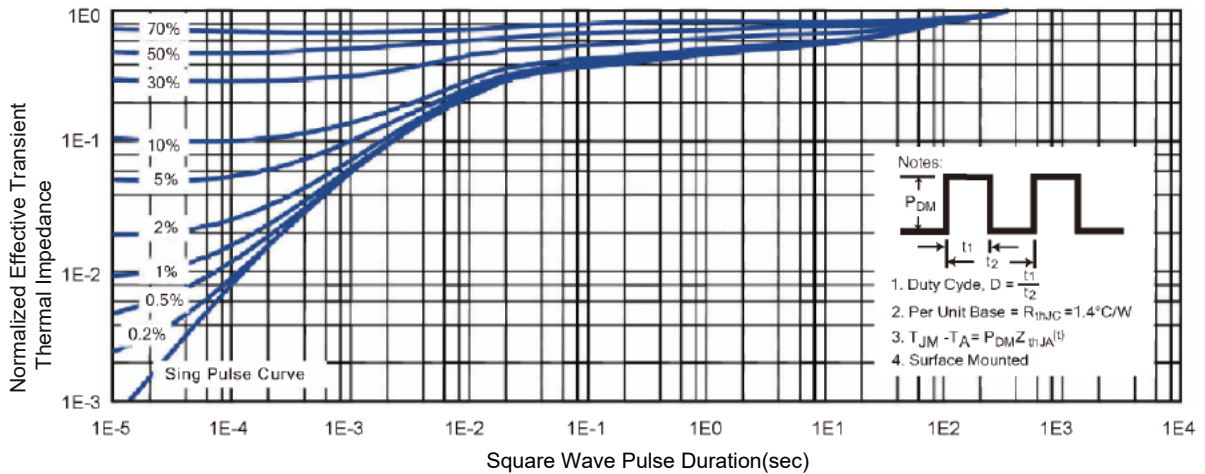
**Fig8. Capacitance**



**Fig9. Maximum Forward Biased Safe Operating Area**



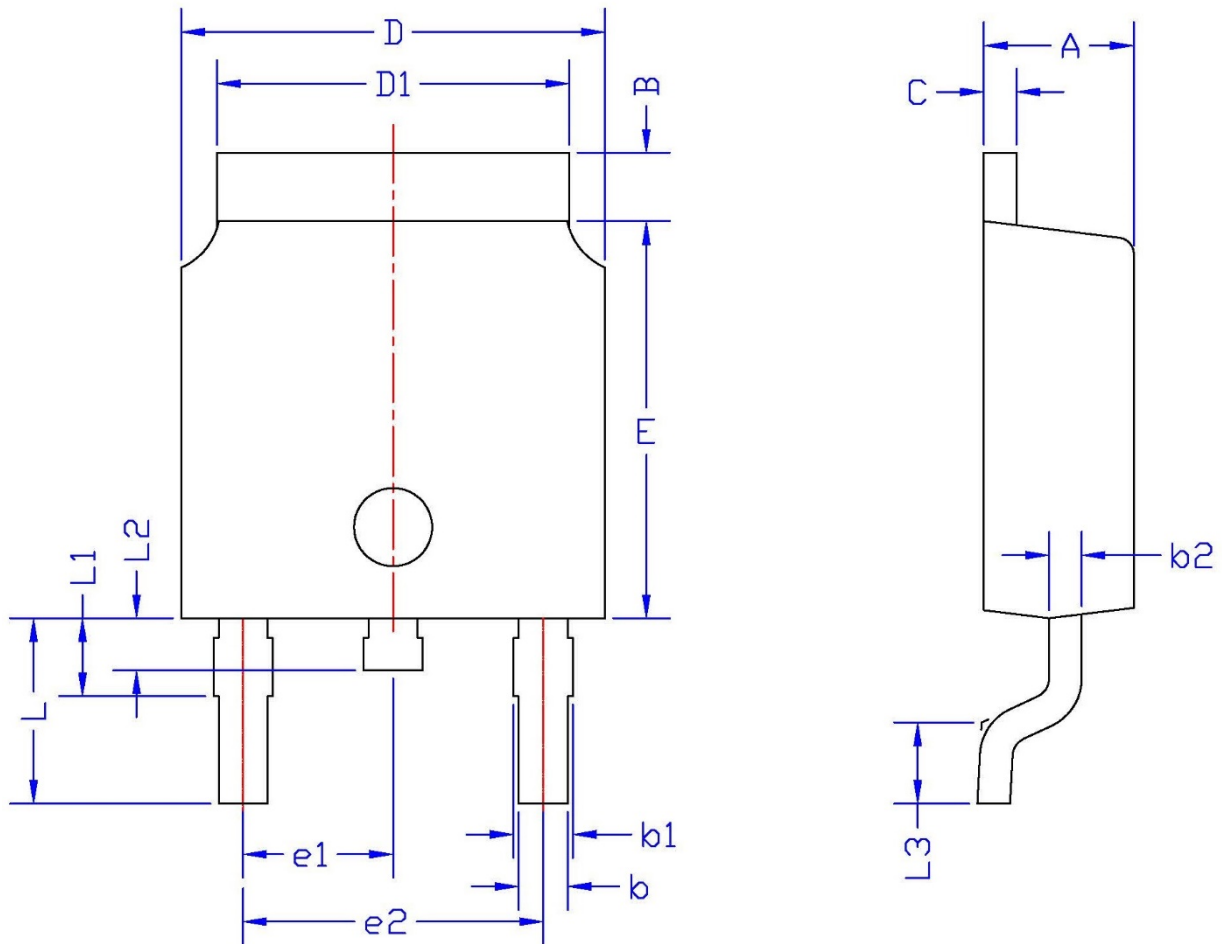
**Fig10. Normalized Thermal Transient Impedance, Junction-to-Case**



●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			

