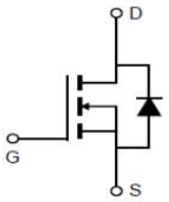
•General Description

Power MOSFET LH840 has the low $R_{DS(on)}$,low gate charge,fast switching and excellent avalanche characteristics.This device offers extremely fast and robust body diode,and is suitable for telecom and power supplies.



VDS =500V

$R_{DS(ON)}$ =650mΩ

ID =9A

■ RoHS COMPLIANT

TO-252

•Features

■Low Thermal Resistance
■Fast Switching
■High Input Resistance

•Application

■LED/LCD/PDP TV and monitor Lighting
■Power Supplies

•Ordering Information:

Part number	LH840
Package	TO-252
Basic ordering unit (pcs)	2500
Normal Package Material Ordering Code	LH840T5-T0252-TAP
Halogen Free Ordering Code	LH840T5-T0252-TAP-HF

•Absolute Maximum Ratings（TC =25℃）

PARAMETER		SYMBOL	Value	UNIT
Drain-Source Breakdown Voltage		BV_{DSS}	500	V
Gate-Source Voltage		V_{GS}	±30	V
Continuous Drain Current	TC = 25°C	I_D	9	A
	TC = 100°C		5.4	
Pulsed drain current (TC = 25°C, tp limited by Tjmax)[1]		I_{DM}	36	A
Single Pulse Avalanche Energy[2]		E_{AS}	560	mJ
Power Dissipation(TC=25℃)		P_D	38.5	W
Junction Temperature		T_J	-55~+150	℃
Storage Temperature		T_{STG}	-55~+150	℃

●Electronic Characteristics

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS} =0V, I_D=250uA	500	--	--	V
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS}=VGS,I_D=250uA	2.0	--	4.0	V
Drain-source On Resistance[3]	$R_{DS(ON)}$	V_{GS} =10V, I_D=4.5A	--	0.65	0.85	Ω
Drain-Source Leakage Current	I_{DSS}	V_{DS}=500V,V_{GS}=0V,T_J=25℃	--	--	1	uA
		V_{DS}=400V,V_{GS}=0V,T_J=125℃	--	--	100	
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±30	--	--	±100	nA
Forward Transconductance[3]	gfs	V_{DS}=15V,I_D=4.5A	--	8	--	S
Input Capacitance	Ciss	V_{GS} = 0V, V_{DS} = 25V f = 1.0MHz	--	1050	--	pF
Output Capacitance	Coss		--	95	--	
Reverse transfer Capacitance	Crss		--	12	--	
Rise Time	Tr	V_{DD}=250V, R_G=25Ω	--	20	--	ns
Fall Time	Tf		--	18	--	
Turn-On Delay Time	Td(on)		--	22	--	
Turn -Off Delay Time[3]	Td(off)		----	49	--	
Total Gate Charge	Qg	I_D =9A, V_{DS} = 400V V_{GS} = 10V	--	21	---	nC
Gate-to-Source Charge	Qgs		--	4.8	--	
Gate-to-Drain Charge	Qgd		--	7.6	---	
Continuous Diode Forward Current	I_S		--	--	9	A
Diode Forward Voltage	V_{SD}	Tj=25°C, Is=9A V_{GS} =0V	--	--	1.4	V
Reverse Recovery Time	trr	If=Is di_F/dt=100A/μs [3]	--	380	--	ns
Reverse Recovery Charge	Qrr		--	1.9	--	uC

●Thermal Characteristics

PARAMETER	SYMBOL	MAX	UNIT
Thermal Resistance Junction-case	Rth_{JC}	3.25	℃/W
Thermal Resistance Junction-ambient	Rth_{JA}	62.5	℃/W

Notes:

1.Repetitive Rating: Pulse width limited by maximum junction temperature.

2. I_{AS} = 9A, V_{DD} = 50V, R_G = 25Ω,L=14Mh, Starting T_J = 25°C

3. Pulse Test : Pulse width ≤ 300μs, Duty cycle ≤ 2%

●Typical Characteristics

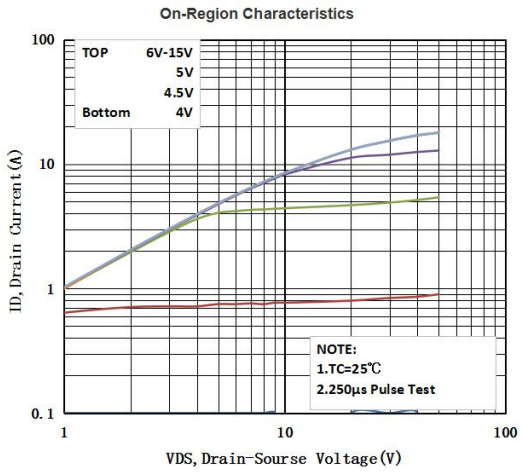


Fig1 Typical Output Characteristics, Tc=25℃

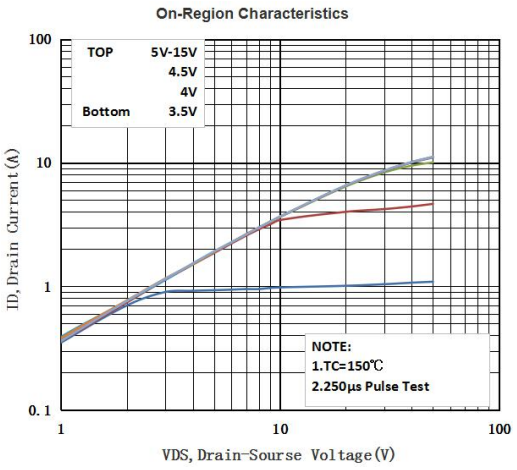


Fig2 Typical Output Characteristics, Tc=150℃

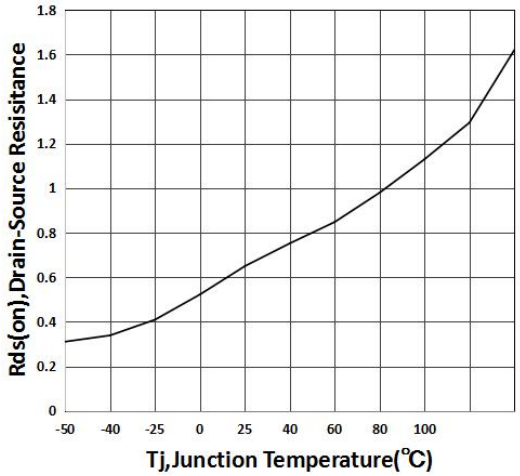


Fig3 Resistance Vs. Temperature

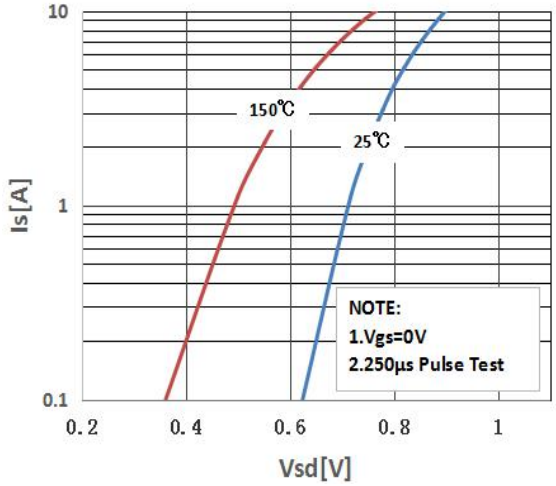


Fig4 Typical Source-Drain Diode Forward Voltage

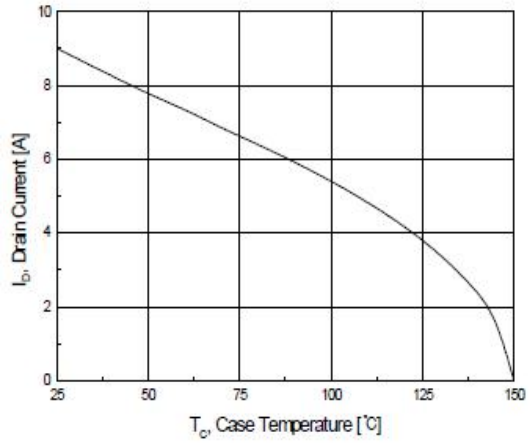


Fig5 Maximum Drain Current Vs. Case Temperature

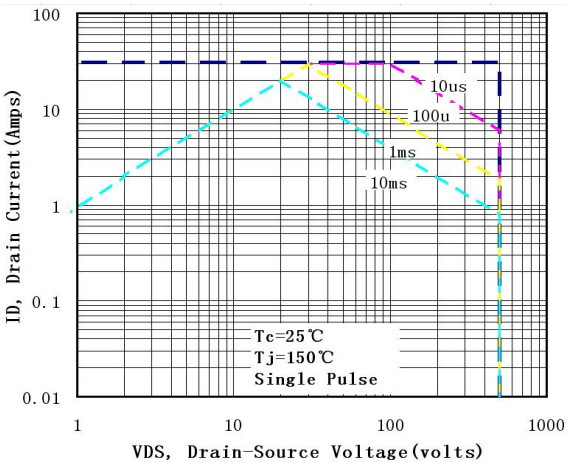


Fig6 Maximum Safe Operating Area

●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