

Features

- Green Device Available
- Super Low Gate Charge
- ESD Protection
- Excellent Cdv/dt effect decline
- Advanced high cell density Trench

Product Summary

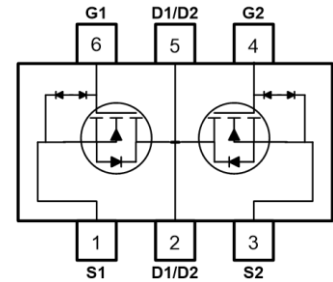
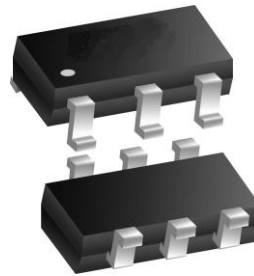
BVDSS	RDSON	ID
20V	17mΩ	7A

Description

The JHT62724 is the high cell density trenched N-ch MOSFETs, which provides excellent RDSON and efficiency for most of the small power switching and load switch applications.

The JHT62724 meet the RoHS and Green Product requirement with full function reliability approved.

SOT-23-6 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	20	V
V_{GS}	Gate-Source Voltage	± 12	V
$I_D@T_A=25^\circ C$	Continuous Drain Current ¹	7.0	A
$I_D@T_A=70^\circ C$	Continuous Drain Current ¹	5.6	A
I_{DM}	Pulsed Drain Current ²	45	A
$P_D@T_A=25^\circ C$	Total Power Dissipation ³	1.25	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ C$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ C$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient ¹	---	100	$^\circ C/W$

N-Channel Electrical Characteristics (T_J=25 °C, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	20	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =4.5V, I _D =3.5A	12	14	17	mΩ
		V _{GS} =4.0V, I _D =3.5A	12.5	14.5	17.5	
		V _{GS} =3.7V, I _D =3.5A	13	15	18	
		V _{GS} =3.1V, I _D =3.5A	14	16	20	
		V _{GS} =2.5V, I _D =3.5A	16	19.5	24.5	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	0.5	0.7	1.2	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =16V, V _{GS} =0V, T _J =25°C	---	---	1	uA
		V _{DS} =16V, V _{GS} =0V, T _J =55°C	---	---	5	
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±8V, V _{DS} =0V	---	---	±10	uA
g _{fs}	Forward Transconductance	V _{DS} =5V, I _D =3.5A	---	20	---	S
Q _g	Total Gate Charge	V _{DS} =15V, V _{GS} =4.5V, I _D =7A	---	11	---	nC
Q _{gs}	Gate-Source Charge		---	1.2	---	
Q _{gd}	Gate-Drain Charge		---	3.2	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =15V, V _{GS} =4.5V, R _G =3.3Ω I _D =3.5A	---	52	---	ns
T _r	Rise Time		---	302	---	
T _{d(off)}	Turn-Off Delay Time		---	805	---	
T _f	Fall Time		---	662	---	
C _{iss}	Input Capacitance	V _{DS} =15V, V _{GS} =0V, f=1MHz	---	523	---	pF
C _{oss}	Output Capacitance		---	81	---	
C _{rss}	Reverse Transfer Capacitance		---	56	---	
Diode Characteristics						
I _S	Continuous Source Current ^{1,4}	V _G =V _D =0V, Force Current	---	---	7	A
V _{SD}	Diode Forward Voltage ²	V _{GS} =0V, I _S =1A, T _J =25°C	---	0.78	1.2	V

Note :

- 1.The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper, t ≤10s.
- 2.The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%
- 3.The power dissipation is limited by 150°C junction temperature
- 4.The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.

N-Channel Typical Characteristics

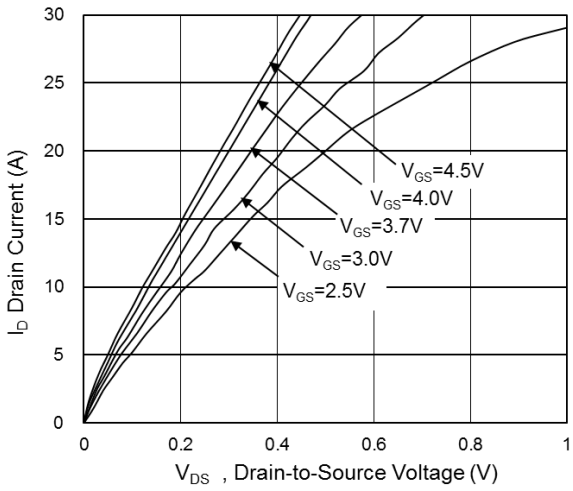


Fig.1 Typical Output Characteristics

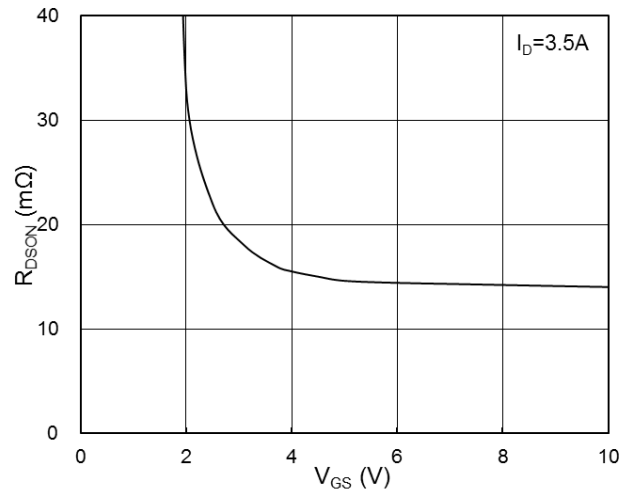


Fig.2 On-Resistance vs. G-S voltage

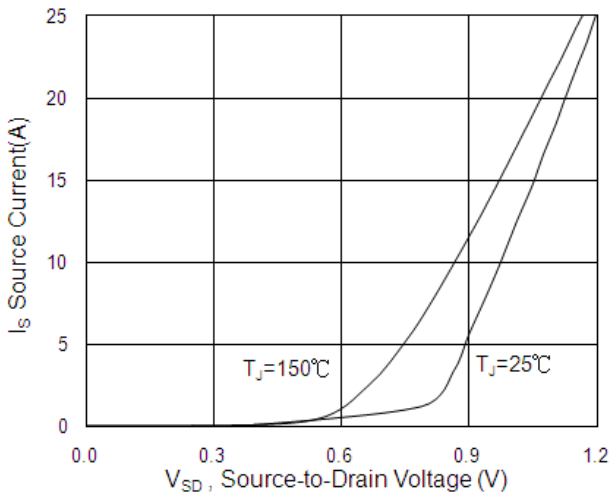


Fig.3 Source-Drain Forward Characteristics

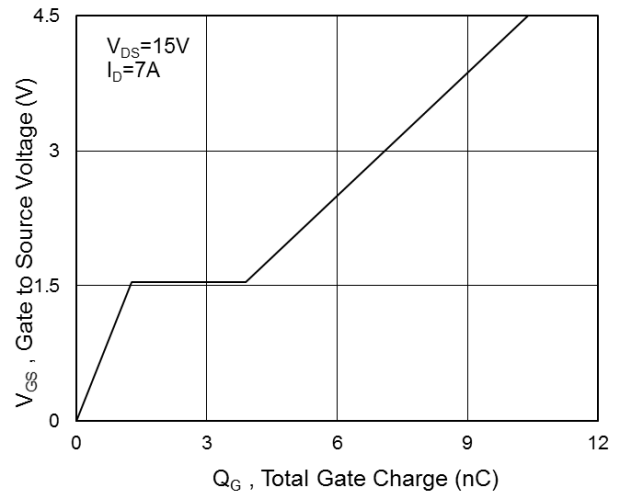


Fig.4 Gate-Charge Characteristics

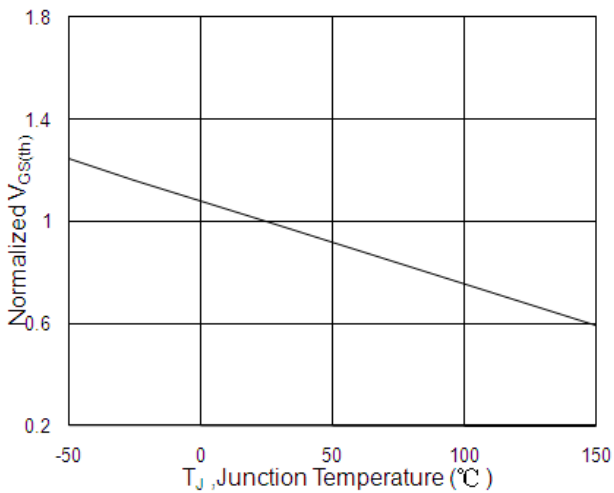


Fig.5 Normalized $V_{GS(th)}$ vs. T_J

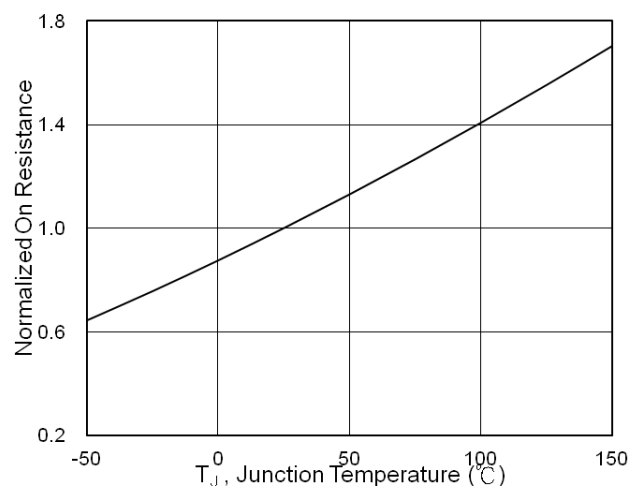


Fig.6 Normalized R_{DSON} vs. T_J

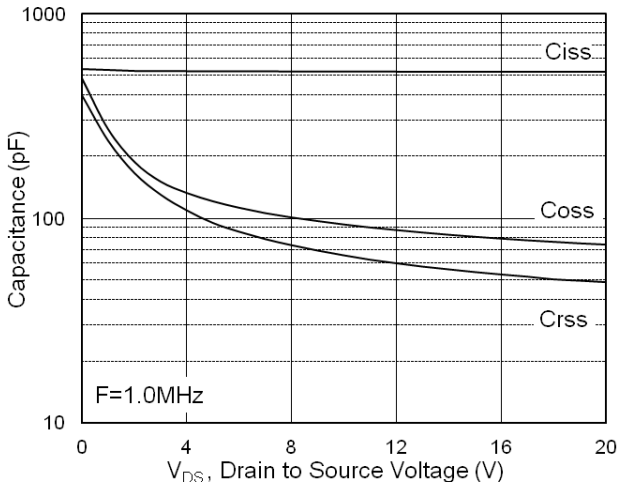


Fig.7 Capacitance

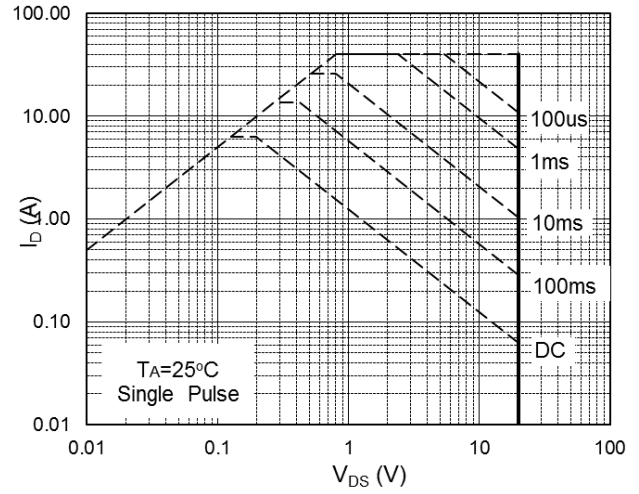


Fig.8 Safe Operating Area

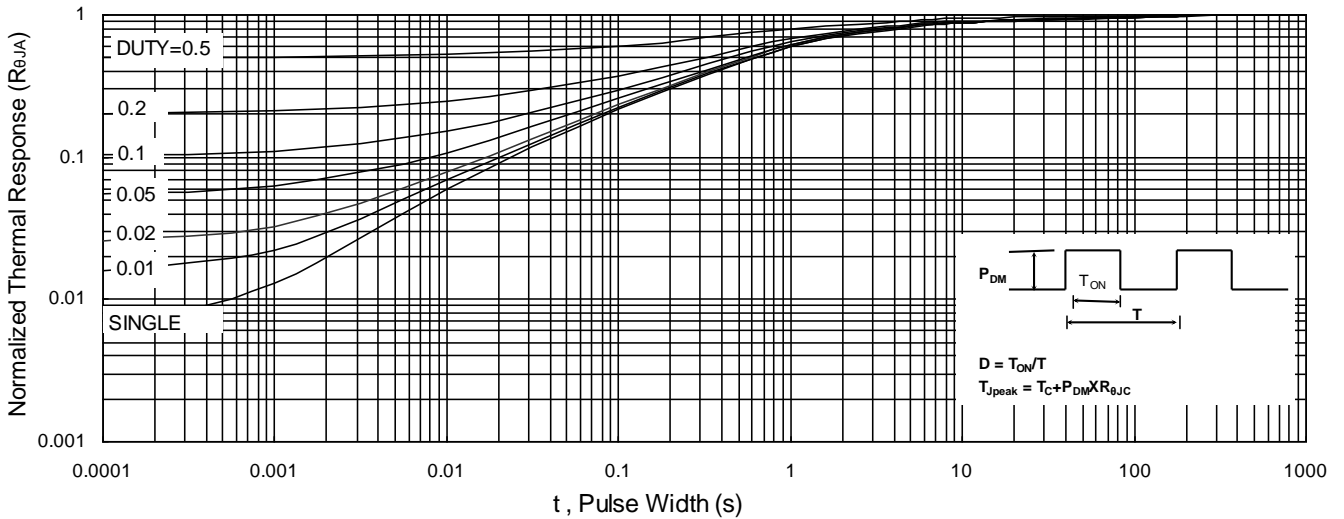


Fig.9 Normalized Maximum Transient Thermal Impedance

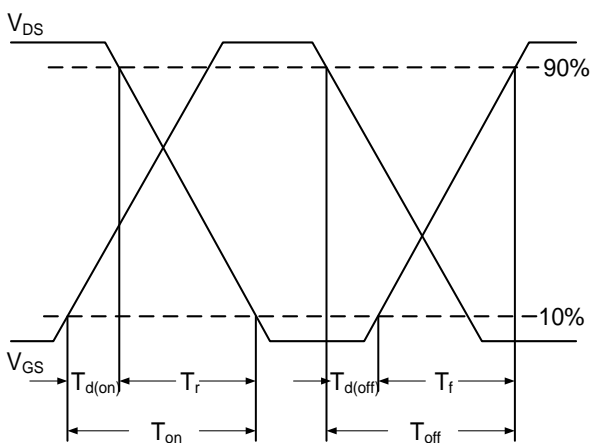


Fig.10 Switching Time Waveform

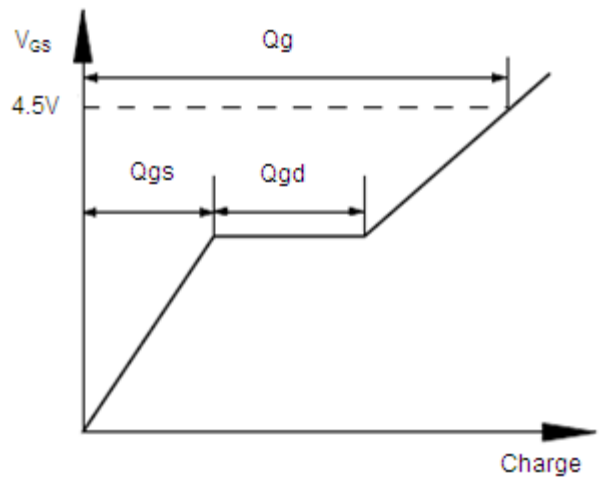
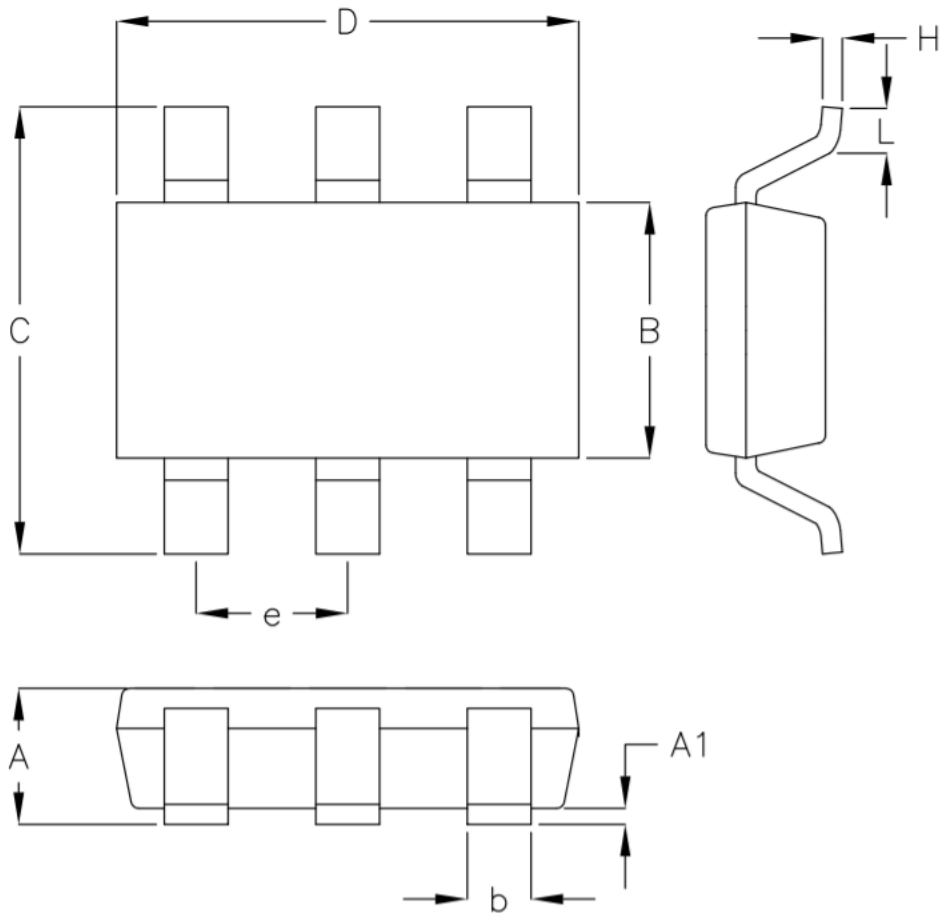


Fig.11 Gate Charge Waveform

SOT-23-6 Package Outline



SYMBOLS	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.70	0.90	0.028	0.035
A1	0.00	0.10	0.000	0.004
B	1.50	1.70	0.059	0.067
b	0.35	0.50	0.014	0.020
C	2.60	3.00	0.102	0.119
D	2.80	3.02	0.110	0.119
e	0.90	1.00	0.035	0.039
H	0.08	0.20	0.003	0.008
L	0.30	0.60	0.012	0.024

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