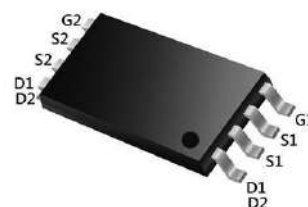


Dual N-ch 20V Fast Switching MOSFETs

Features:

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

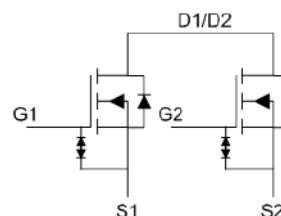


TSSOP8 Pin Configuration

Description:

The KWO2742 is the low RDSON trenched N-CH MOSFETs with robust ESD protection. This product is suitable for Lithium-ion battery pack applications.

The KWO2742 meet the RoHS and Green Product requirement with full function reliability approved.



Product Summary

BVDSS	RDSON	ID
20V	25mΩ	6A

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°C	Continuous Drain Current ¹	6	A
I _D @T _A =70°C	Continuous Drain Current ¹	4.8	A
I _{DM}	Pulsed Drain Current ²	24	A
P _D @T _A =25°C	Total Power Dissipation ³	1.5	W
T _{STG}	Storage Temperature Range	-55 to 150	°C
T _J	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
R _{θJA}	Thermal Resistance Junction-ambient ¹	---	85	°C/W

Electrical Characteristics ($T_J=25\text{ }^{\circ}\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	20	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance ²	$V_{GS}=4.5V, I_D=5A$	16.5	19	25	m Ω
		$V_{GS}=4.0V, I_D=5A$	17	19.5	26	
		$V_{GS}=3.7V, I_D=5A$	17.5	20	28.5	
		$V_{GS}=3.1V, I_D=4A$	19	21.5	32	
		$V_{GS}=2.5V, I_D=4A$	22	24	40	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}, I_D=250\mu A$	0.5	---	1.2	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=16V, V_{GS}=0V, T_J=25^{\circ}\text{C}$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 8V, V_{DS}=0V$	---	---	± 100	nA
gfs	Forward Transconductance	$V_{DS}=5V, I_D=3.5A$	---	20	---	S
Q_g	Total Gate Charge (4.5V)	$V_{DS}=15V, V_{GS}=4.5V, I_D=7A$	---	11.4	---	nC
Q_{gs}	Gate-Source Charge		---	1.6	---	
Q_{gd}	Gate-Drain Charge		---	2.9	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=10V, V_{GS}=4.5V, R_G=3.3\Omega$ $I_D=5A$	---	5	---	ns
T_r	Rise Time		---	32.4	---	
$T_{d(off)}$	Turn-Off Delay Time		---	28	---	
T_f	Fall Time		---	9	---	
C_{iss}	Input Capacitance	$V_{DS}=15V, V_{GS}=0V, f=1\text{MHz}$	---	863	---	pF
C_{oss}	Output Capacitance		---	87	---	
C_{rss}	Reverse Transfer Capacitance		---	71	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current ^{1,4}	$V_G=V_D=0V$, Force Current	---	---	6	A
V_{SD}	Diode Forward Voltage ²	$V_{GS}=0V, I_S=1A, T_J=25^{\circ}\text{C}$	---	---	1.2	V

Note :

- 1.The data tested by surface mounted on a 1 inch² FR-4 board with 20Z copper.
- 2.The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
- 3.The power dissipation is limited by 150 $^{\circ}\text{C}$ 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.

Typical Characteristics

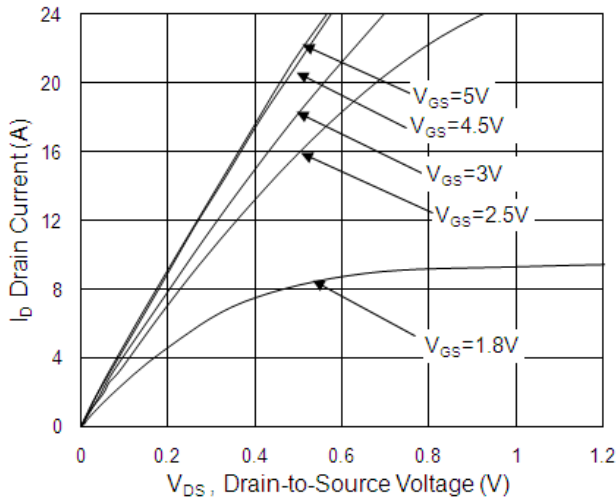


Fig.1 Typical Output Characteristics

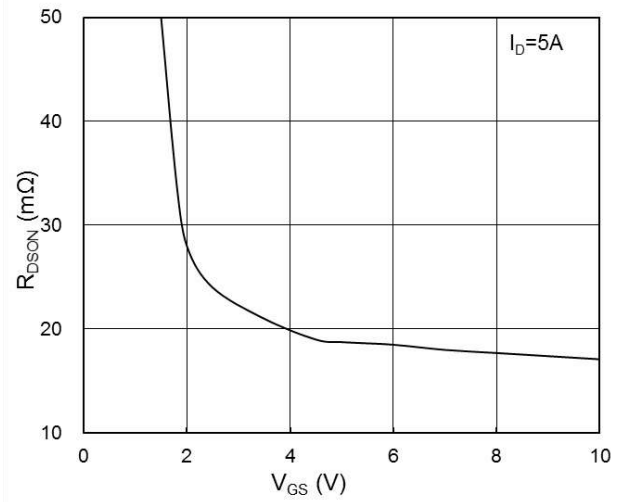


Fig.2 On-Resistance vs. Gate-Source Voltage

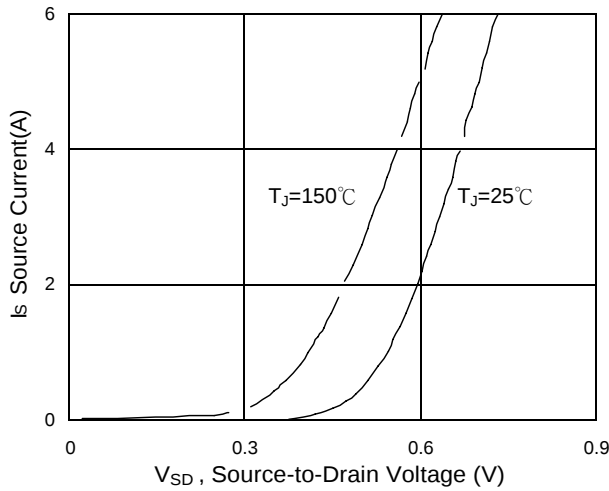


Fig.3 Forward Characteristics of Reverse

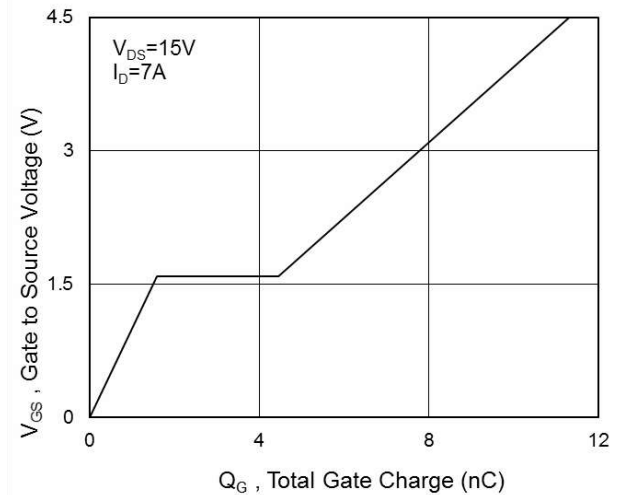


Fig.4 Gate-Charge Characteristics

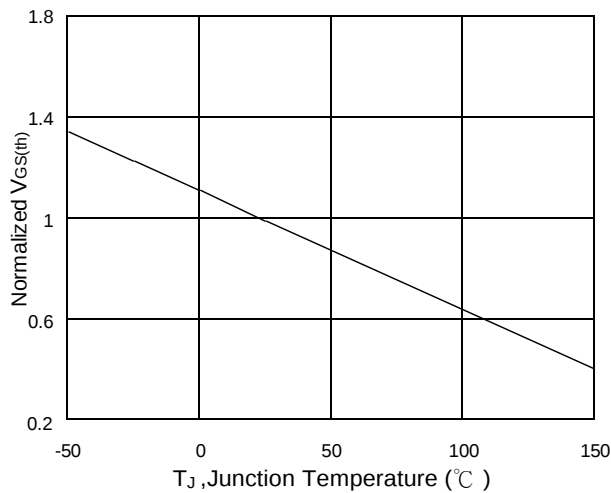


Fig.5 $V_{GS(th)}$ vs. T_J

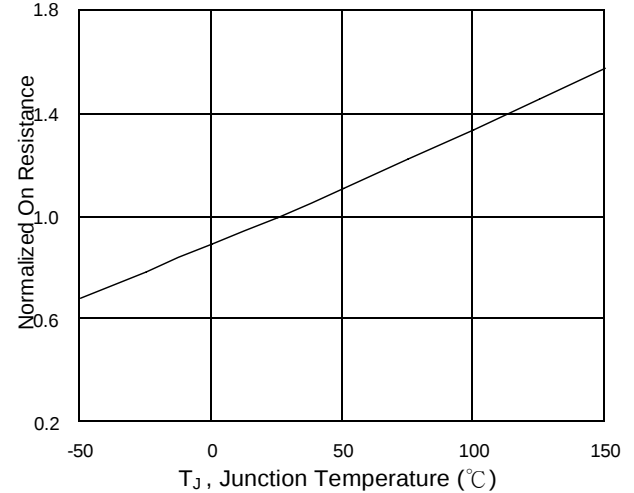


Fig.6 Normalized $R_{DS(on)}$ vs. T_J

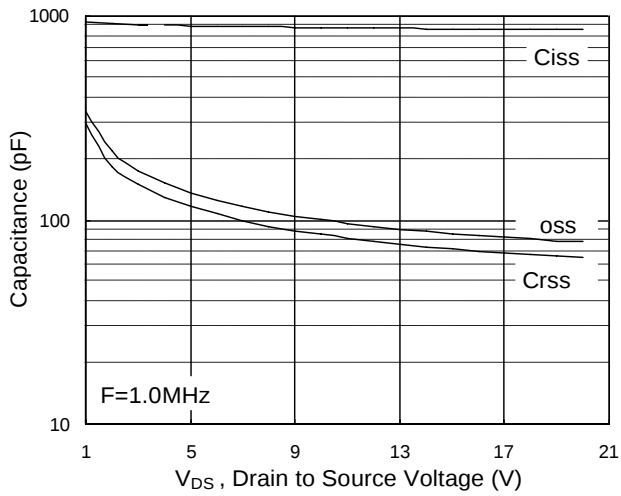


Fig.7 Capacitance

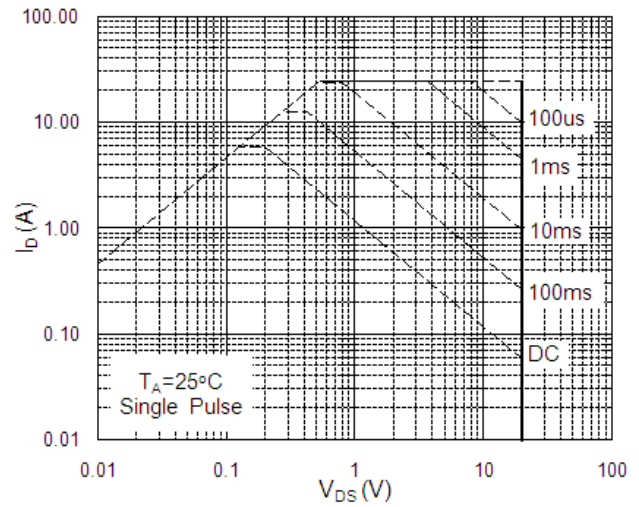


Fig.8 Safe Operating Area

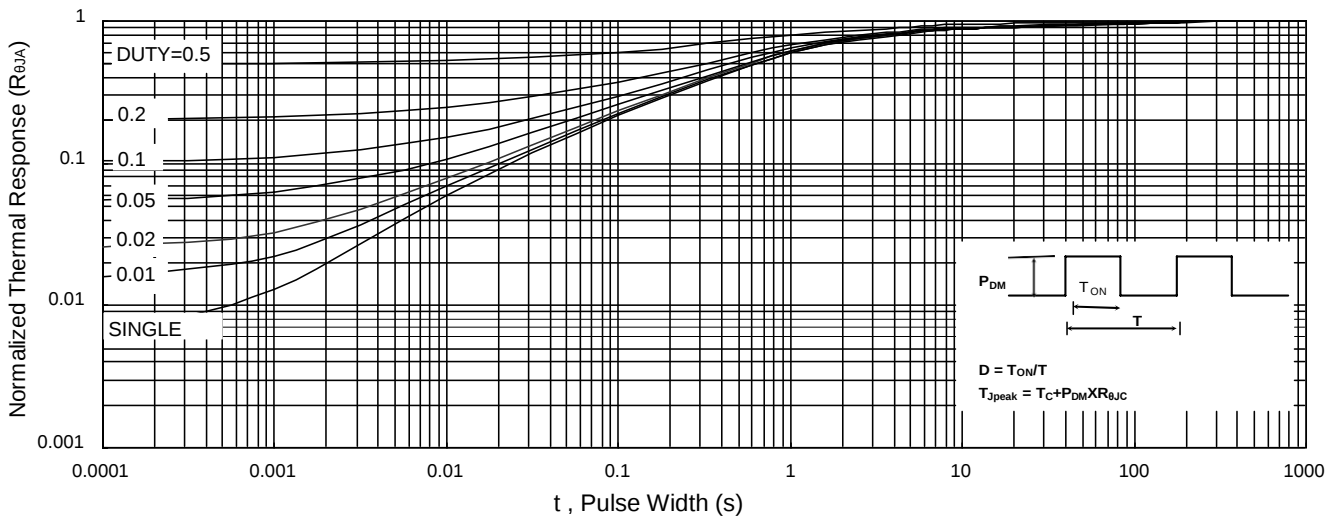


Fig.9 Normalized Maximum Transient Thermal Impedance

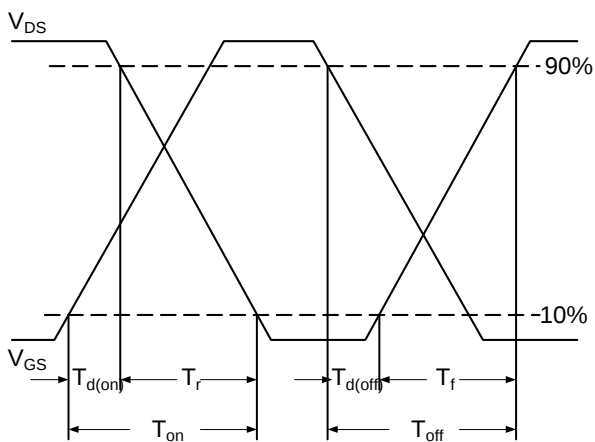


Fig.10 Switching Time Waveform

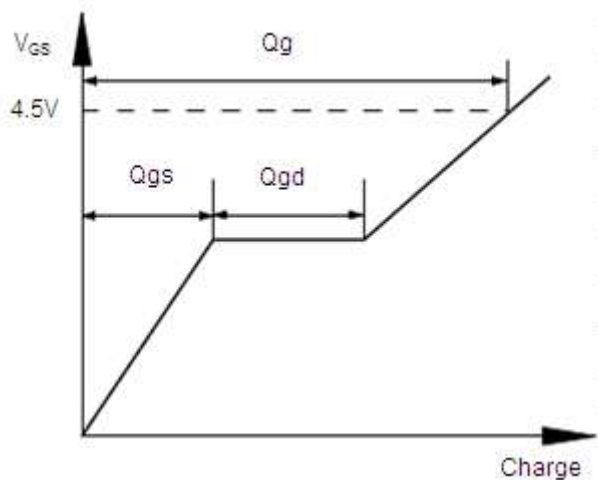
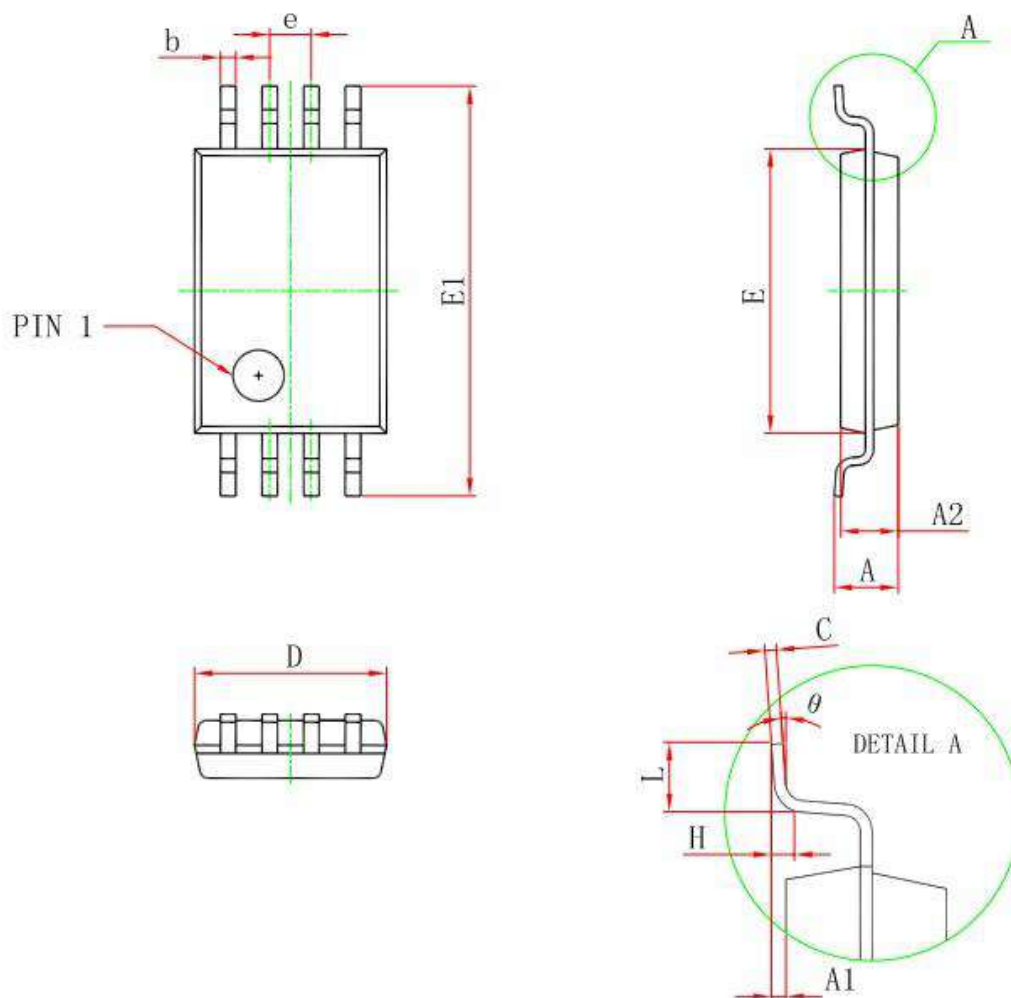


Fig.11 Gate Charge Waveform

TSSOP8 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
D	2.900	3.100	0.114	0.122
E	4.300	4.500	0.169	0.177
b	0.190	0.300	0.007	0.012
e	0.090	0.200	0.004	0.008
E1	6.250	6.550	0.246	0.258
A		1.200		0.047
A2	0.800	1.000	0.031	0.039
A1	0.050	0.150	0.002	0.006
e	0.65 (BSC)		0.026 (BSC)	
L	0.500	0.700	0.020	0.028
H	0.25(TYP)		0.01(TYP)	
θ	1°	7°	1°	7°

Marking Instruction

