Dual N Channel MOSFETs
VDS=30V, ID=800mA

DESCRIPTION

These dual N Channel enhancement mode power field effect transistors are using trench DMOS technology. This advanced technology has been especially tailored to minimize on-state resistance, provide superior switching performance, and withstand high energy pulse in the avalanche and commutation mode. These devices are well suited for high efficiency fast switching applications.

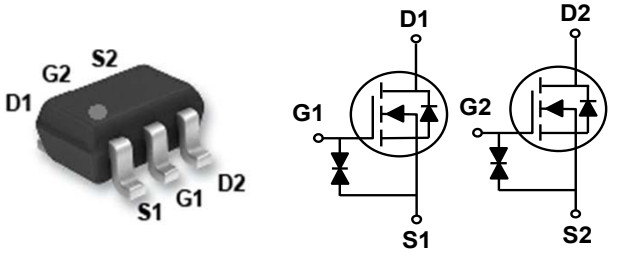
FEATURES

- $R_{DS(ON)} \leqq 450m\Omega @ V_{GS}=4.5V$
- Fast Switching
- Green Device Available
- Suit for 1.5V Gate Drive Applications
- Marking：U

APPLICATIONS

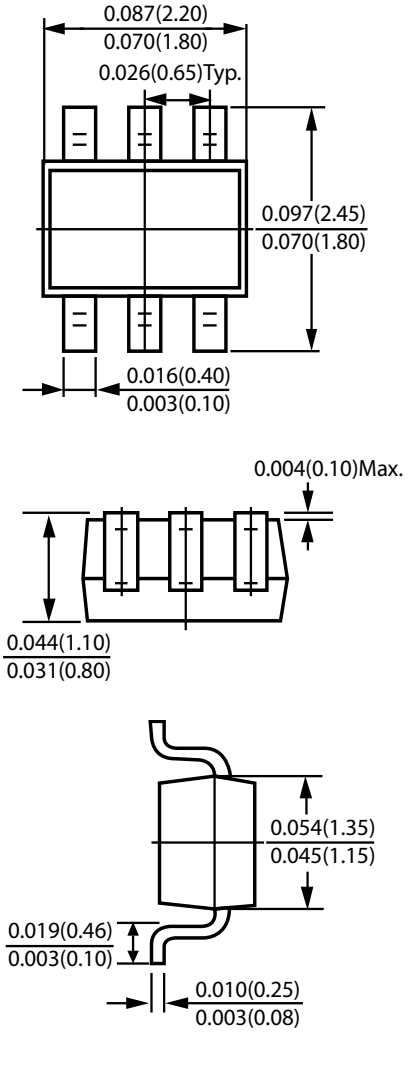
- Notebook
- Load Switch
- Networking
- Hand-Held Instruments

SOT-363 Dual PIN CONFIGURATION



SOT-363

Unit:inch(mm)



Maximum Ratings @ T_C=25°C unless otherwise noted

Parameter		Symbol	Rating	Units
Drain-Source Voltage		V_{DSS}	30	V
Gate-Source Voltage		V_{GSS}	±12	V
Drain Current - Continuous	T_A=25°C	I_D	800	mA
	T_A=70°C		640	mA
Drain Current - Pulsed (NOTE 1)		I_{DM}	3.2	A
Power Dissipation (T_A=25°C)		P_D	275	mW
Thermal Resistance Junction to Ambient		$R_{\theta JA}$	450	°C/W
Operating Junction and Storage Temperature Range		T_J , T_{STG}	-55 to +150	°C

DEVICE CHARACTERISTICS

YSE3520ZDW

Electrical Characteristics (T_J=25°C unless otherwise noted)

Off Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=250uA	30	---	---	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=30V , V_{GS}=0V , T_J=25°C	---	---	1	uA
		V_{DS}=24V , V_{GS}=0V , T_J=125°C	---	---	10	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±12V , V_{DS}=0V	---	---	±20	uA

On Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=4.5V , I_D=0.3A	---	---	450	mΩ
		V_{GS}=2.5V , I_D=0.2A	---	---	650	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D=250uA	0.5	0.7	1.2	V
gfs	Forward Transconductance	V_{DS}=4V , I_D=0.3A	---	0.8	---	S

Dynamic and switching Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Q_g	Total Gate Charge	V_{DS}=15V , V_{GS}=4.5V , I_D=0.3A (NOTE 2、3)	---	2.6	---	nC
Q_{gs}	Gate-Source Charge		---	0.9	---	
Q_{gd}	Gate-Drain Charge		---	0.6	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=15V , V_{GS}=4.5V , R_G=10Ω , I_D=0.3A (NOTE 2、3)	---	5.5	---	ns
T_r	Rise Time		---	4	---	
$T_{d(off)}$	Turn-Off Delay Time		---	14.5	---	
T_f	Fall Time		---	6.5	---	
C_{iss}	Input Capacitance	V_{DS}=15V , V_{GS}=0V , F=1MHz	---	72.9	---	pF
C_{oss}	Output Capacitance		---	18.3	---	
C_{rss}	Reverse Transfer Capacitance		---	7.4	---	

Drain-Source Diode Characteristics and Ratings

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	0.8	A
I_{SM}	Pulsed Source Current		---	---	1.6	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=0.3A , T_J=25°C	---	---	1	V

NOTES：

1. Repetitive Rating：Pulsed width limited by maximum junction temperature.
2. The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%.
3. Essentially independent of operating temperature.

DEVICE CHARACTERISTICS

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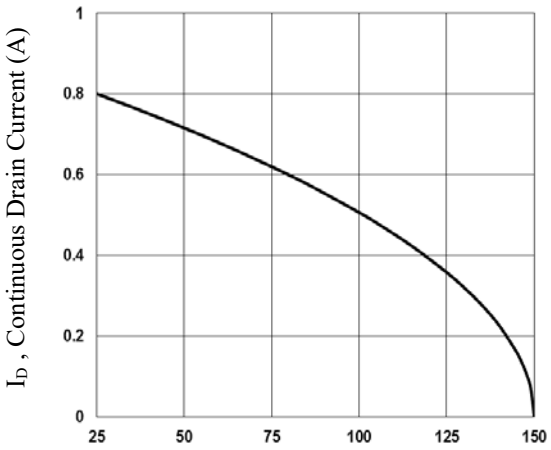

Fig.1 Continuous Drain Current vs. T_C

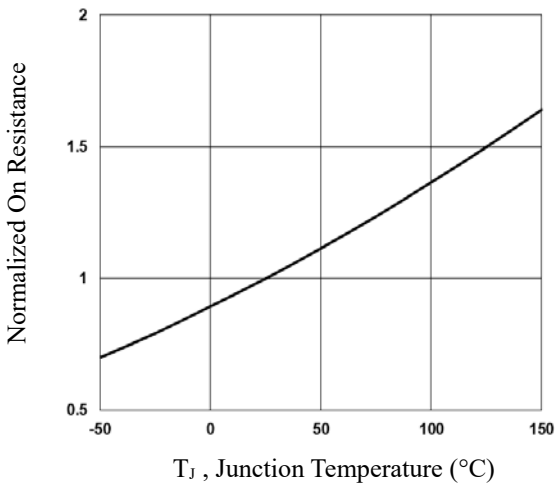

Fig.2 Normalized RDSON vs. T_J

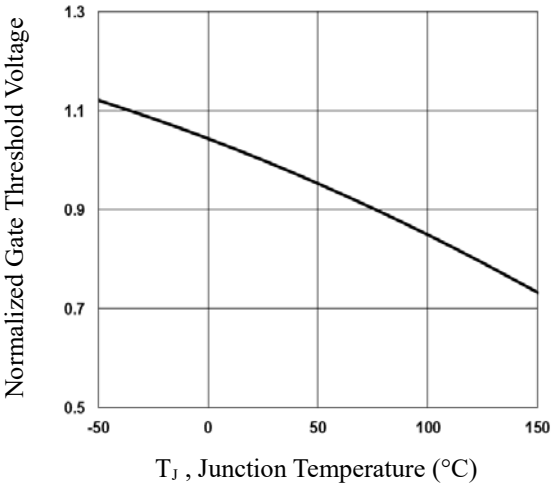

Fig.3 Normalized Vth vs. T_J

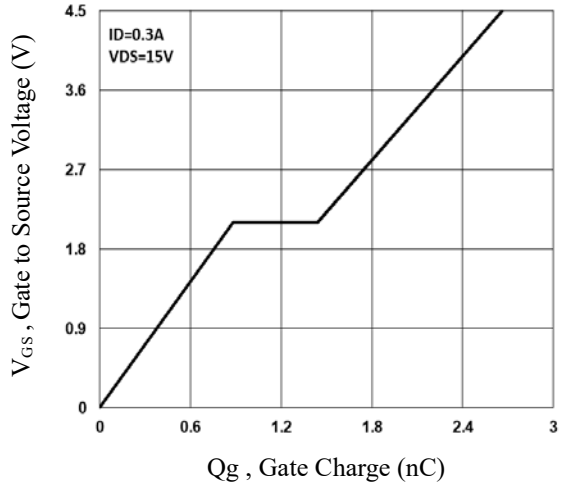

Fig.4 Gate Charge Waveform

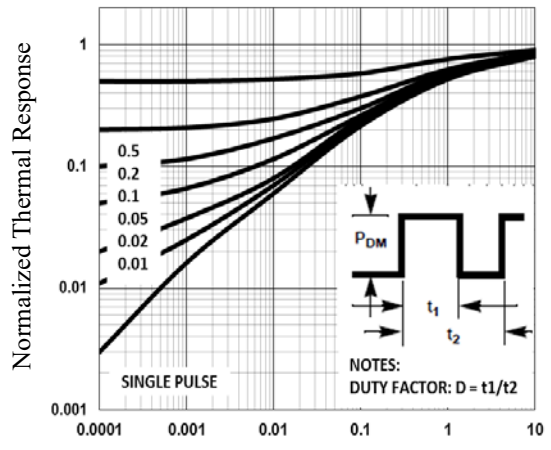

Fig.5 Normalized Transient Impedance

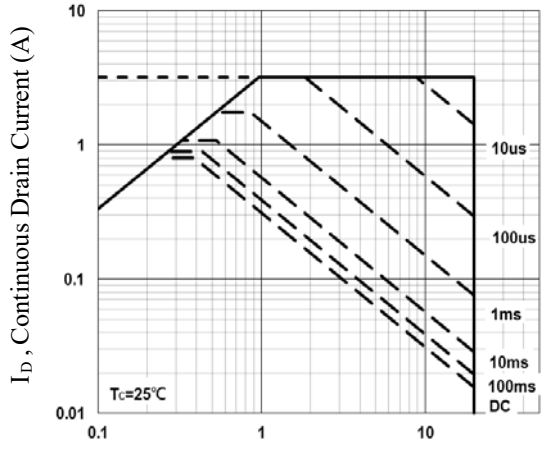

Fig.6 Maximum Safe Operation Area