TUMNG30H

60V Dual N-Channel MOSFETs

BV_{DSS}	$R_{DS(ON)}$	I_D
60 V	3 Ω	300 mA

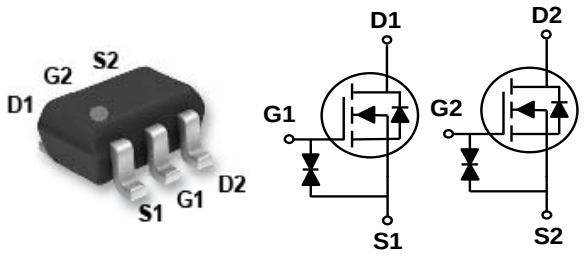
General Description

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

- 60V, 300mA, $R_{DS(ON)}$=3Ω@V_{GS}=10V
- Fast switching
- Green Device Available
- Suit for 2.5V Gate Drive Applications
- G-S ESD Protection Diode Embedded

SOT-363 Pin Configuration



Applications

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

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Drain Current - Continuous (T_C=25°C)	300	mA
	Drain Current - Continuous (T_C=100°C)	240	mA
I_{DM}	Drain Current - Pulsed (NOTE 1)	1.2	A
P_D	Power Dissipation (T_C=25°C)	275	mW
	Power Dissipation - Derate above 25°C	2.2	mW/°C
T_J	Operating Junction Temperature Range	-50 to 150	°C
T_{STG}	Storage Temperature Range	-50 to 150	°C
Marking Code		L	

Thermal Characteristics

Symbol	Parameter	Typ.	Max	Unit
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	---	450	°C/W

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	60	---	---	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=48V , V_{GS}=0V , T_J=25°C	---	---	1	uA
		V_{DS}=48V , V_{GS}=0V , T_J=85°C	---	---	10	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V , V_{DS}=0V	---	---	±20	uA

On Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=0.3A	---	1.1	3	Ω
		V_{GS}=4.5V , I_D=0.2A	---	1.3	4	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D=250uA	1.2	2.0	2.5	V

Dynamic and switching Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
C_{iss}	Input Capacitance	V_{DS}=30V , V_{GS}=0V , F=1MHz	---	23	46	pF
C_{oss}	Output Capacitance		---	16	32	
C_{rss}	Reverse Transfer Capacitance		---	10	20	

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	---	---	300	mA
I_{SM}	Pulsed Source Current (NOTE 3)		---	---	600	mA
V_{SD}	Diode Forward Voltage (NOTE 3)	V_{GS}=0V , I_S=0.2A , 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.

Characteristics Curves

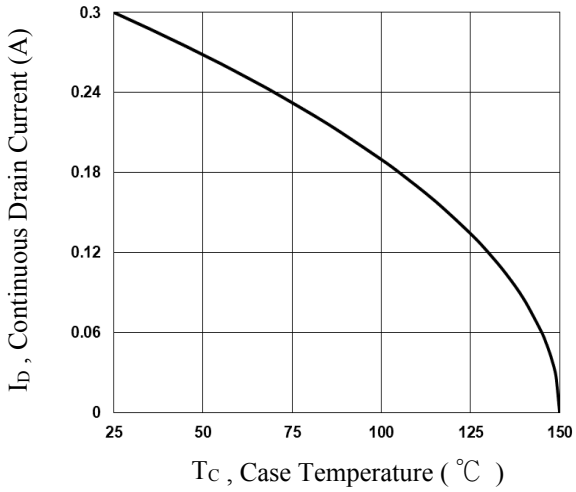


Fig.1 Continuous Drain Current vs. Tc

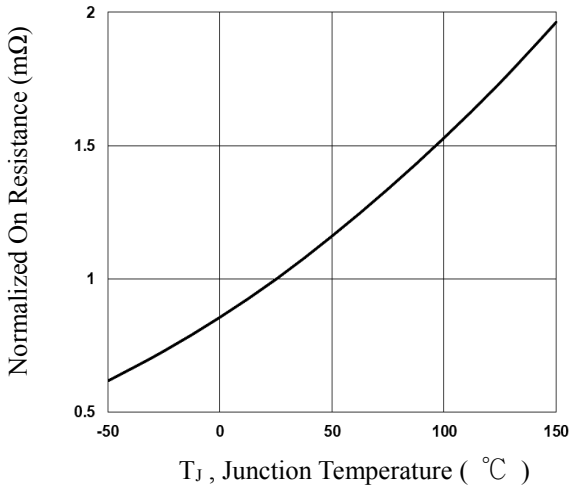


Fig.2 Normalized RDSON vs. TJ

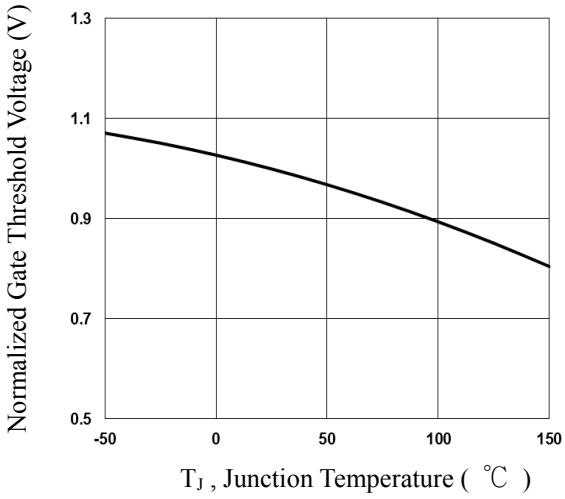


Fig.3 Normalized Vth vs. TJ

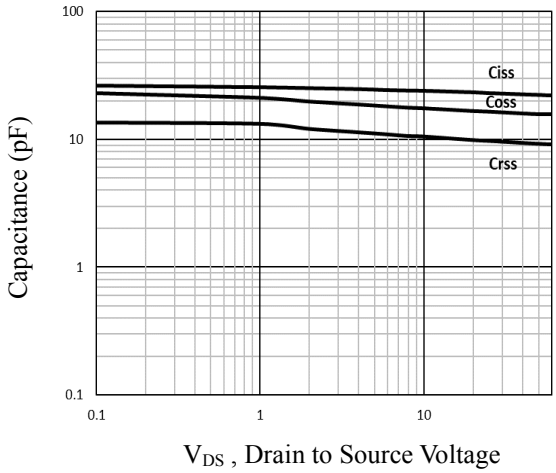


Fig.4 Capacitance

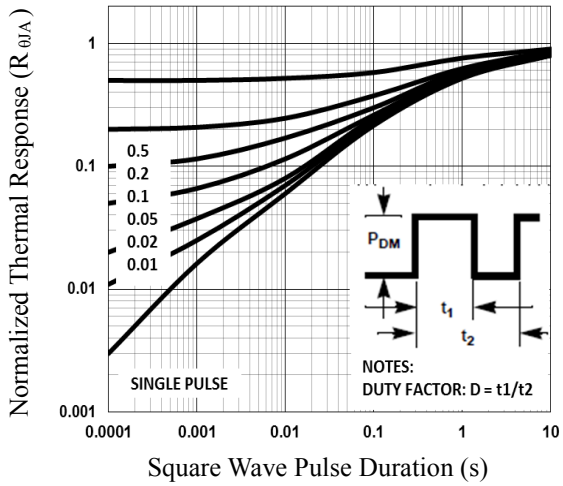


Fig.5 Normalized Transient Impedance

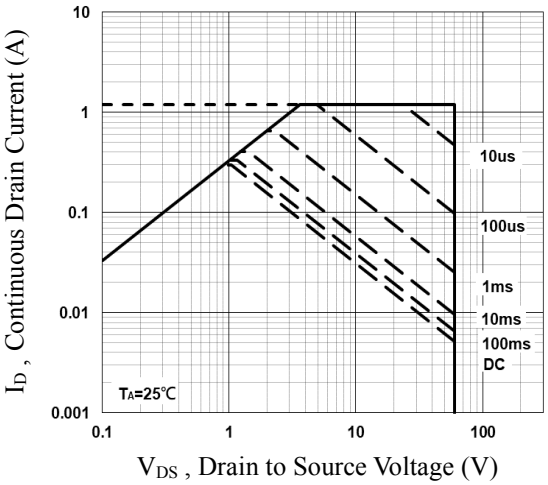
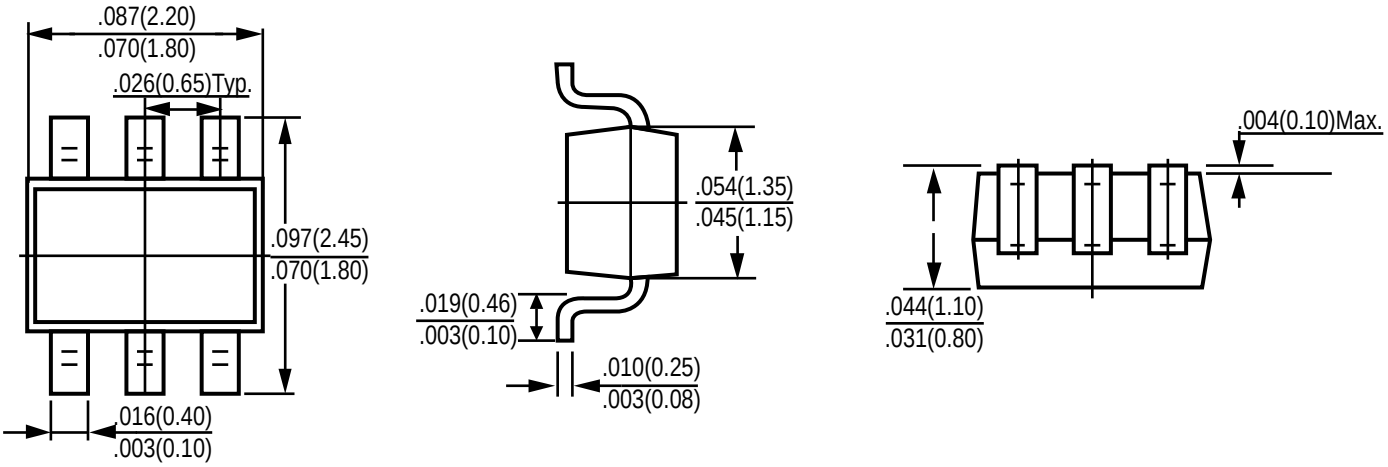


Fig.6 Maximum Safe Operation Area

Package Outline Dimensions



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Dimensions in inches and (millimeters)

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