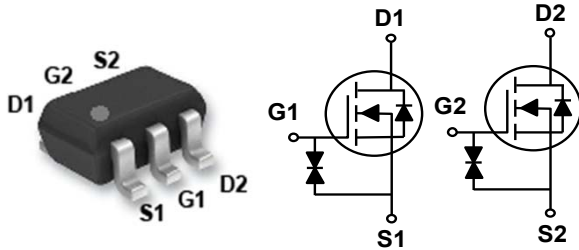




TUMNF16H



55V N-Channel MOSFETs



BV_{DSS}	$R_{DS(ON)}$	I_D
55 V	1.6 Ω	360 mA

SOT-363

Features

- 55V, 0.36A, $R_{DS(ON)}=1.6\Omega@V_{GS}=10V$
- ESD Protected
- Fast switching
- Green Device Available

Applications

- Case : SOT-363
- Load Switch
- Hand-Held Instruments

Absolute Maximum Ratings $T_A=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	55	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Drain Current - Continuous	360	mA
I_{DM}	Drain Current - Pulsed	1200	mA
P_D	Total Power Dissipation ($T_A=25^\circ\text{C}$) (NOTE 1)	275	mW
T_J	Operating Junction Temperature Range	-50 to 150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-50 to 150	$^\circ\text{C}$
Marking Code		E38 , D8	

NOTES :

1.1*MRP FR-4 PC board,2oz.

Thermal Characteristics

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

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=10\mu A$	55	---	---	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=55V$, $V_{GS}=0V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	± 10	μA

On Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$R_{DS(on)}$	Static Drain-Source On-Resistance	$V_{GS}=2.5V$, $I_D=100mA$	---	2.6	4.5	Ω
		$V_{GS}=4.5V$, $I_D=200mA$	---	1.5	2.5	
		$V_{GS}=10V$, $I_D=500mA$	---	1.3	1.6	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	0.8	---	1.5	V
gfs	Forward Transconductance	$V_{DS}=10V$, $I_D=250mA$	300	---	---	mS

Dynamic and switching Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Q_g	Total Gate Charge	$V_{DS}=15V$, $V_{GS}=5V$, $I_D=200mA$	---	---	1	nC
$T_{d(on)}$	Delay Turn-On Time	$V_{DD}=30V$, $R_L=150\Omega$, $V_{GS}=10V$, $R_G=10\Omega$, $I_D=200mA$	---	1.3	---	ns
$T_{d(off)}$	Delay Turn-Off Time		---	5.5	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $F=1MHz$	---	---	50	pF
C_{oss}	Output Capacitance		---	7	---	
C_{rss}	Reverse Transfer Capacitance		---	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	---	---	500	mA
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=500mA$	---	0.94	1.2	V
t_{rr}	Reverse Recovery Time	$V_{GS}=0V$, $V_{DD}=30V$, $I_S=1A$, $dI_S/dt=100A/\mu s$	---	14.4	---	nS
Q_{rr}	Reverse Recovery Charge		---	5.8	---	nC



Characteristics Curves

FIG. 1-Output Characteristic

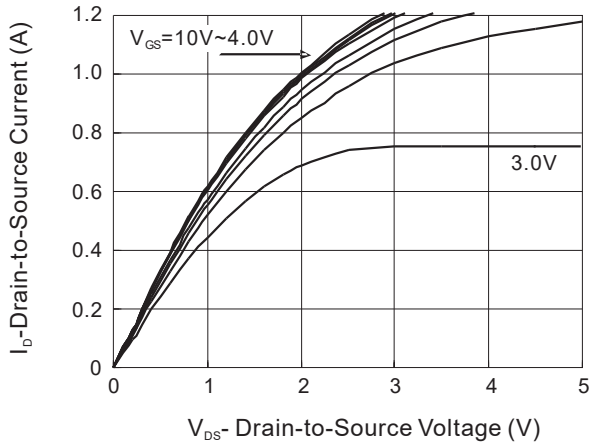


FIG. 2-Transfer Characteristic

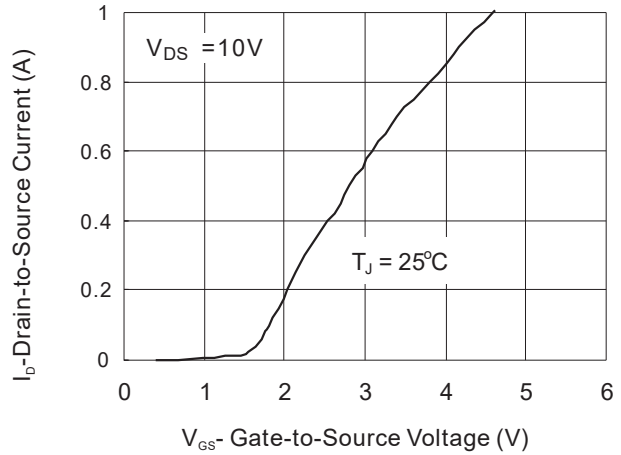


FIG. 3-On-Resistance vs Drain Current

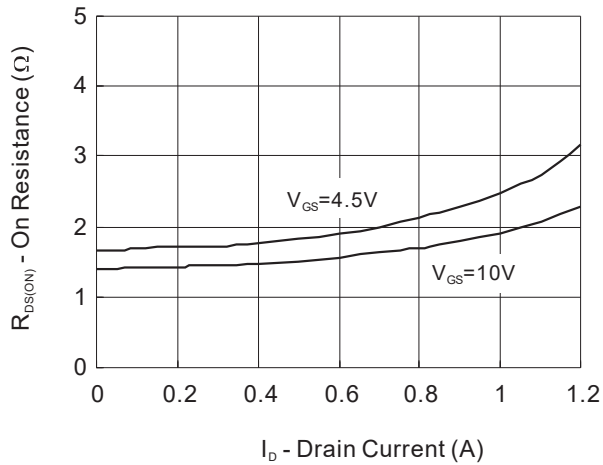


FIG. 4-On-Resistance vs Gate to Source Voltage

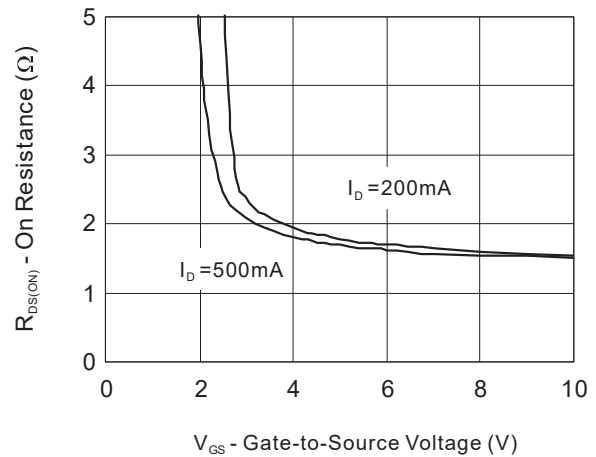


FIG. 5-On-Resistance vs Junction Temperature

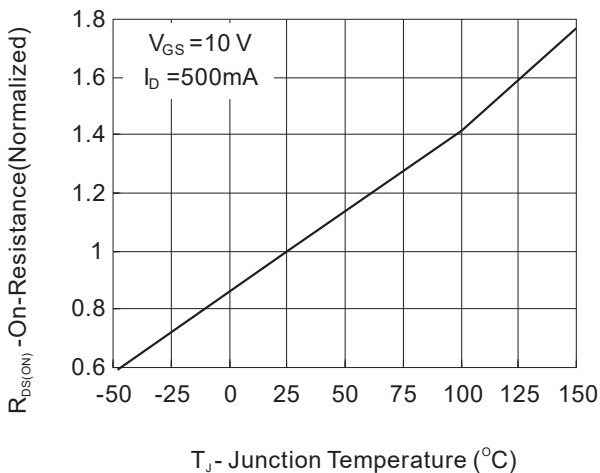
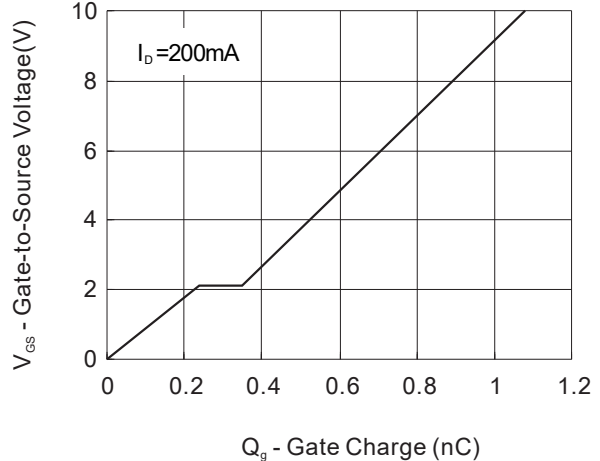


FIG. 6-Gate Charge Waveform





Characteristics Curves

FIG. 7-Source-Drain Diode Forward Voltage

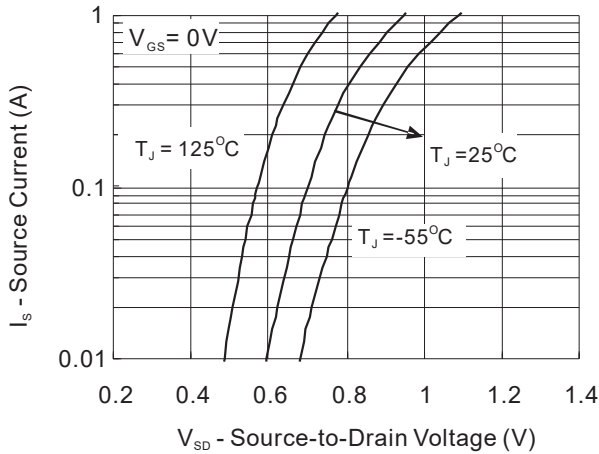


FIG. 8-Threshold Voltage vs Temperature

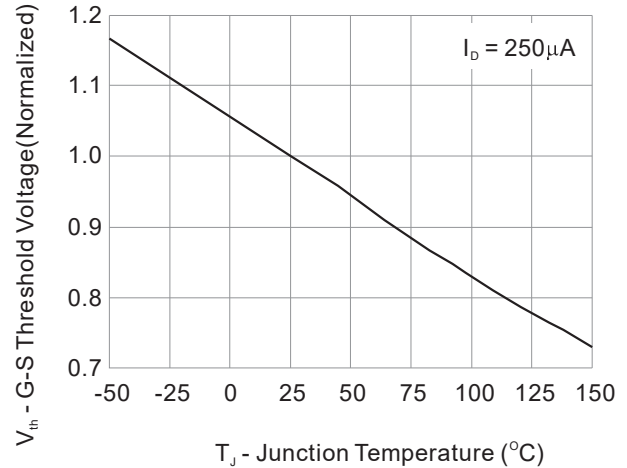


FIG. 9-Breakdown Voltage vs Junction Temperature

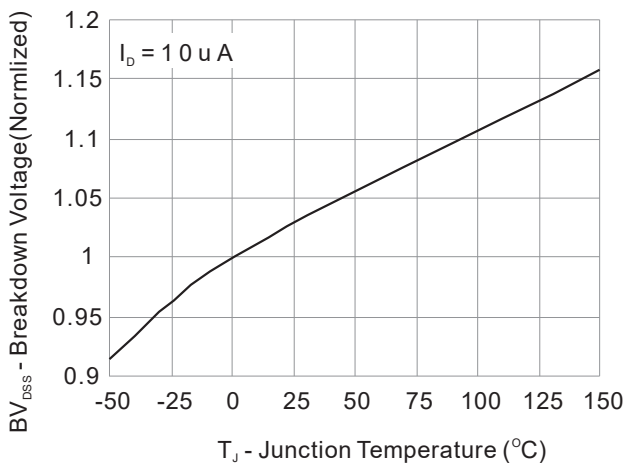
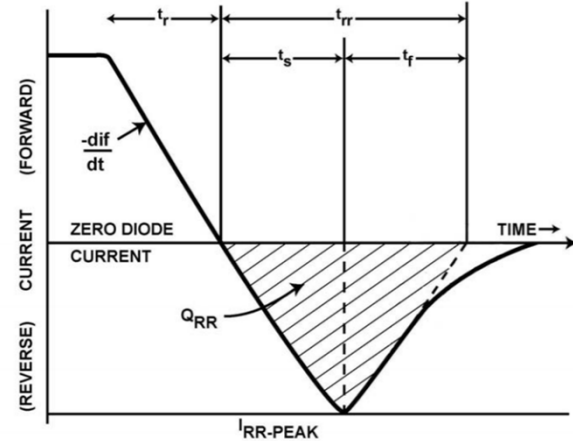
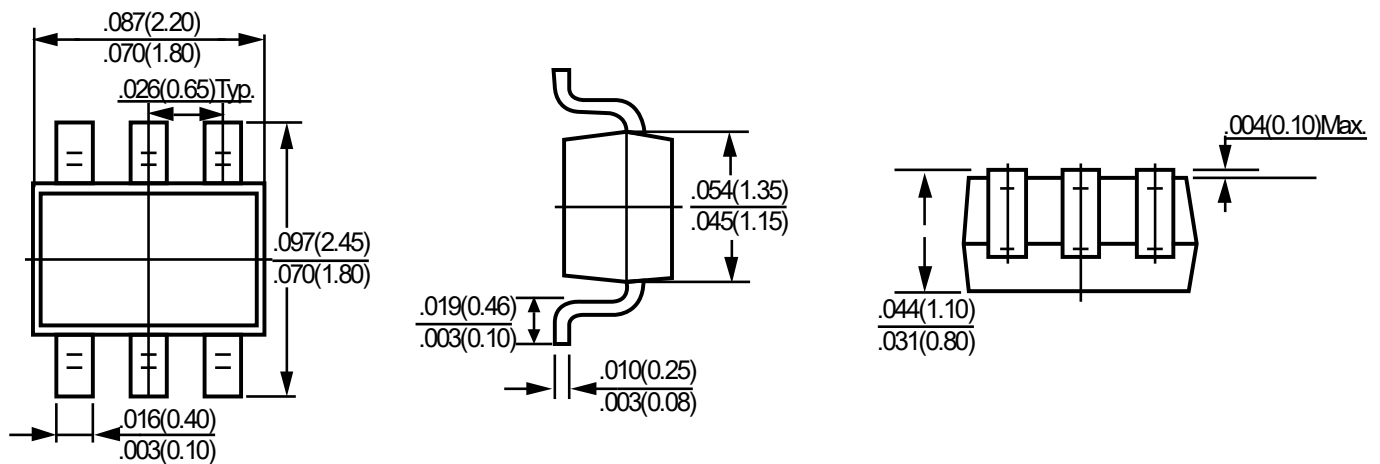


FIG. 10-QRR and TRR Waveform definitions



Package Outline Dimensions



SOT-363

Dimensions in inches and (millimeters)



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