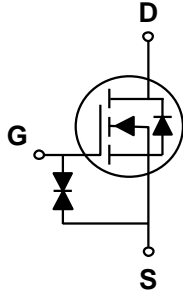
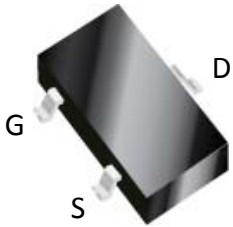




TQMNF16H



55V N-Channel MOSFETs



BV_{DSS}	$R_{DS(ON)}$	I_D
55 V	1.6 Ω	300 mA

SOT-523

Features

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

Applications

- Case : SOT-523
- Load Switch
- Hand-Held Instruments

Absolute Maximum Ratings $T_C=25^\circ C$ 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	300	mA
I_{DM}	Drain Current - Pulsed (NOTE 1)	1200	mA
P_D	Power Dissipation ($T_A=25^\circ C$)	275	mW
T_J	Operating Junction Temperature Range	-50 to 150	$^\circ C$
T_{STG}	Storage Temperature Range	-50 to 150	$^\circ C$

Thermal Characteristics

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

**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	$V_{GS}=0V, I_D=250\mu A$	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	$V_{GS}=4.5V, I_D=200mA$	---	---	2.5	Ω
		$V_{GS}=10V, I_D=500mA$	---	---	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
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=30V, R_L=150\Omega, V_{GS}=10V, R_G=10\Omega, I_D=200mA$	---	1.3	---	ns
$T_{d(off)}$	Turn-Off Delay 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	---	---	300	mA
V_{SD}	Diode Forward Voltage	$V_{GS}=0V, I_S=500mA$	---	0.94	1.4	V



Characteristics Curves

FIG. 1-Output Characteristic

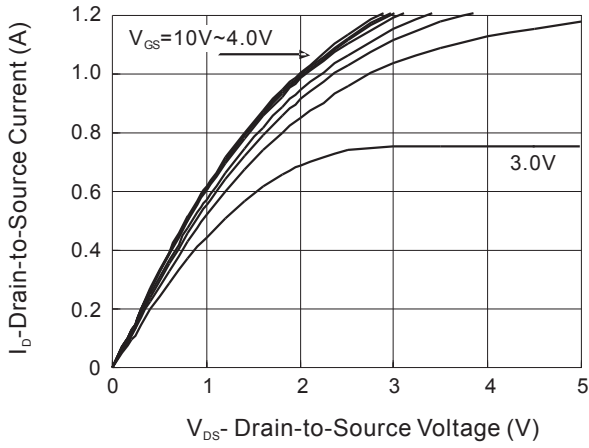


FIG. 2-Transfer Characteristic

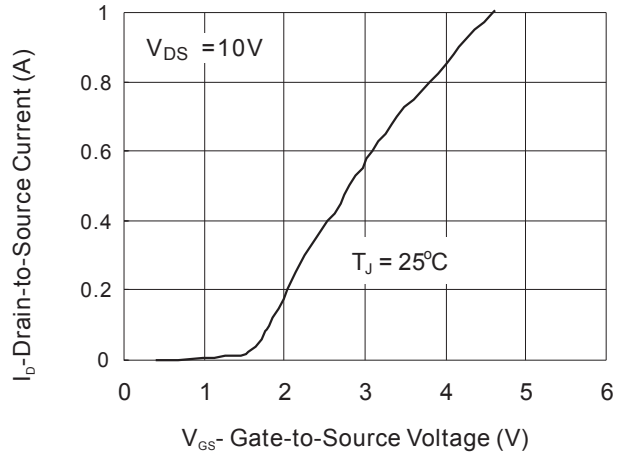


FIG. 3-On-Resistance vs Drain Current

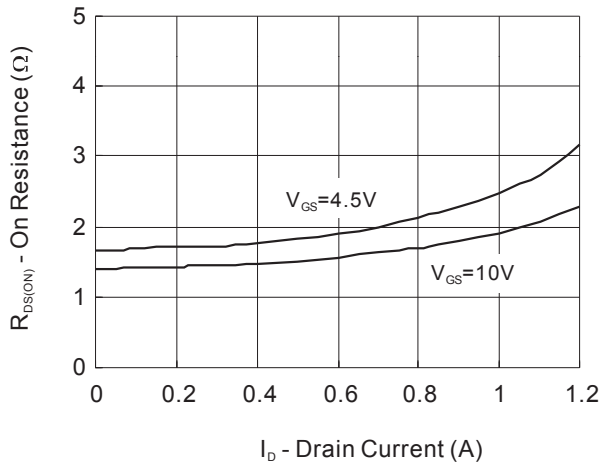


FIG. 4-On-Resistance vs Gate to Source Voltage

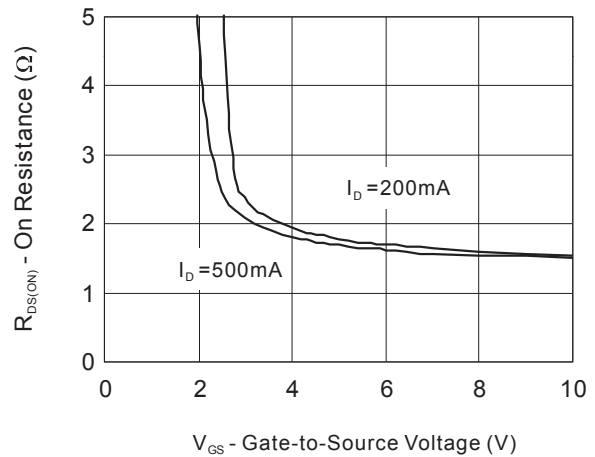


FIG. 5-On-Resistance vs Junction Temperature

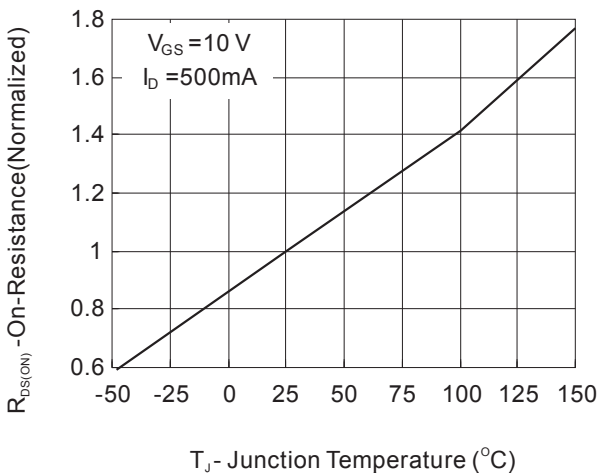
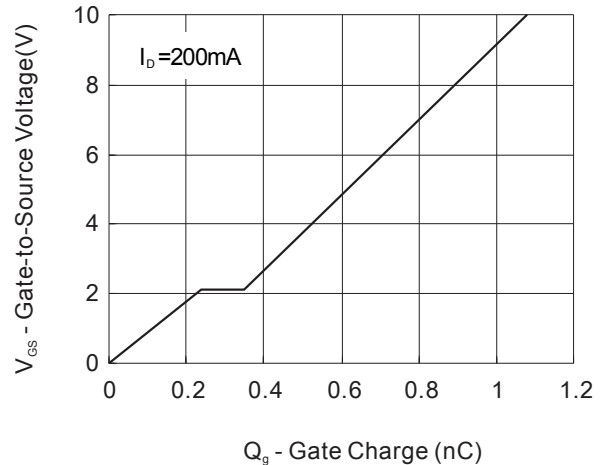


FIG. 6-Gate Charge Waveform





Characteristics Curves

FIG. 7-Source-Drain Diode Forward Voltage

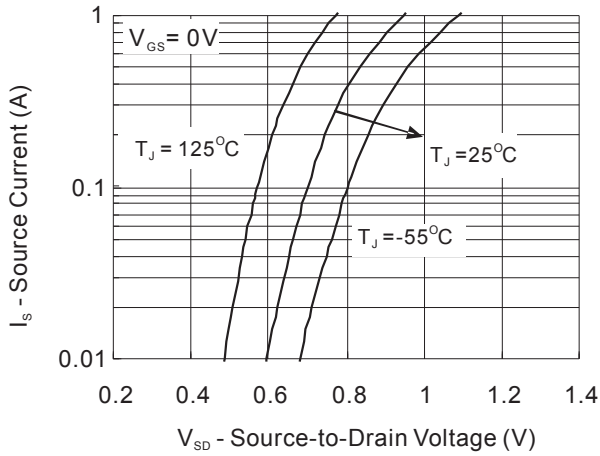


FIG. 8-Threshold Voltage vs Temperature

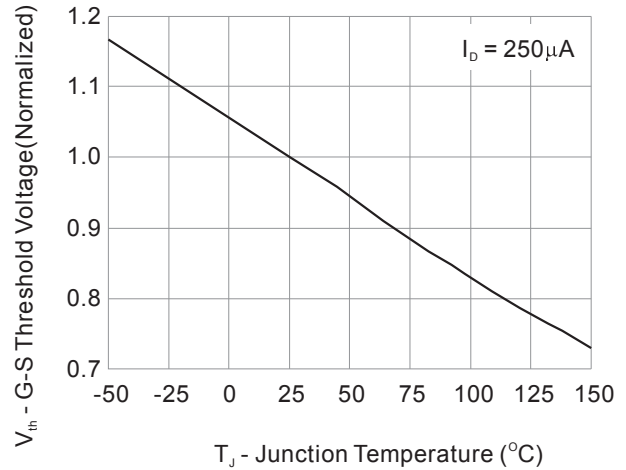
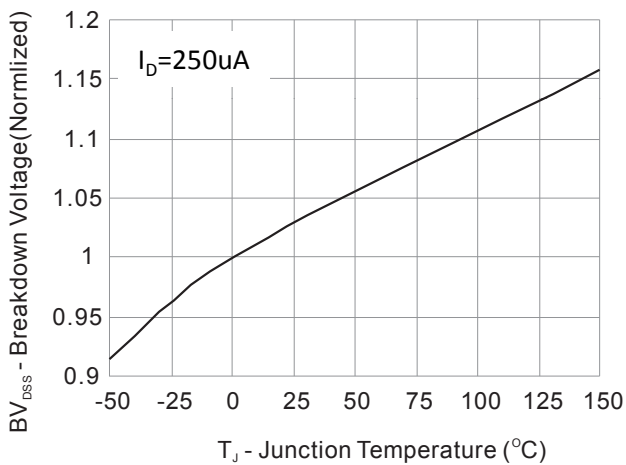
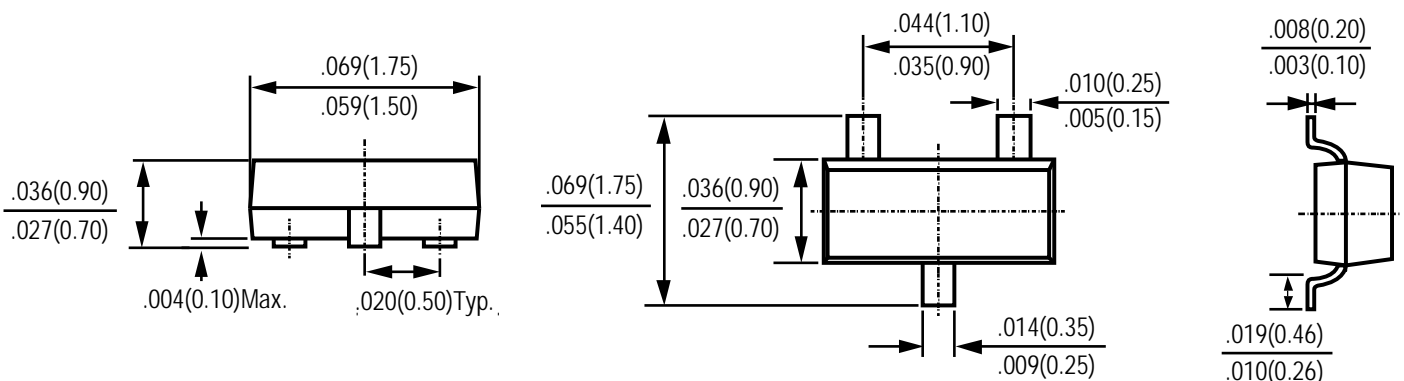


FIG. 9-Breakdown Voltage vs Junction Temperature



Package Outline Dimensions



SOT-523

Dimensions in inches and (millimeters)



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