

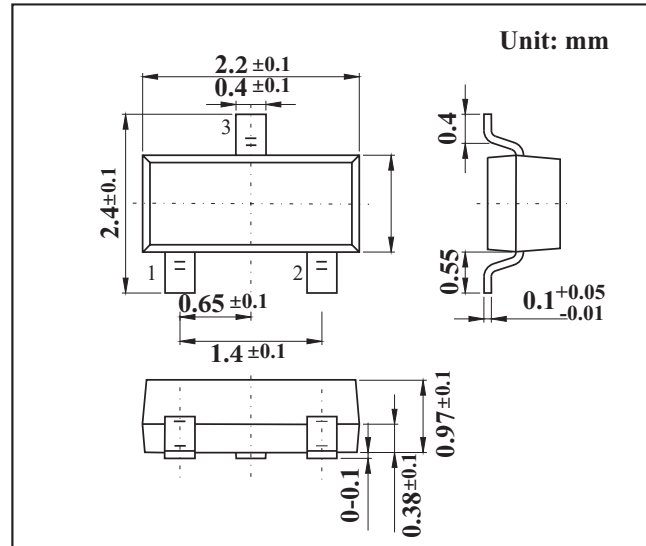
SOT-323 Plastic-Encapsulate MOSFETS

FEATURES

- $V_{DS} (V) = 30V$ $I_D = 0.1A$ $R_{DS(ON)} < 8\Omega$
- $(V_{GS} = 4V)$ $R_{DS(ON)} < 13\Omega$ $(V_{GS} = 2.5V)$
- Low on-resistance
- Fast switching speed
- Low voltage drive makes this device ideal for
- Portable equipment
- Easily designed drive circuits
- Easy to parallel
- N-channel MOSFET

MECHANICAL DATA

- Case style: SOT-323 molded plastic
- Mounting position: any



MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current	I_D	100	mA
Pulsed Drain Current (Note.1)	I_{DM}	400	
Power Dissipation	P_D	150	mW
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{stg}	-55 to 150	

Mosfet Electrical Characteristics $T_A=25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DS}	$I_D=250\mu A$, $V_{GS}=0V$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V$, $V_{GS}=0V$			1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS}=0V$, $V_{GS}=\pm 20V$			± 1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=3V$, $I_D=0.1mA$	0.8		1.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=4V$, $I_D=10mA$			8	Ω
		$V_{GS}=2.5V$, $I_D=1mA$			13	
Forward Transconductance	g_{FS}	$V_{DS}=3V$, $I_D=10mA$	20			mS
Input Capacitance	C_{iss}	$V_{GS}=0V$, $V_{DS}=5V$, $f=1MHz$		13		pF
Output Capacitance	C_{oss}			9		
Reverse Transfer Capacitance	C_{rss}			4		
Turn-On DelayTime	$t_{d(on)}$	$V_{GS}=5V$, $V_{DS}=5V$, $I_D=10mA$, $R_L=500\Omega$, $R_G=10\Omega$		15		ns
Turn-On Rise Time	t_r			35		
Turn-Off DelayTime	$t_{d(off)}$			80		
Turn-Off Fall Time	t_f			80		

RATINGS AND CHARACTERISTIC CURVES

Typical Characteristics

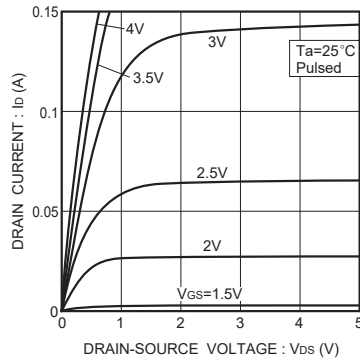


Fig.1 Typical output characteristics

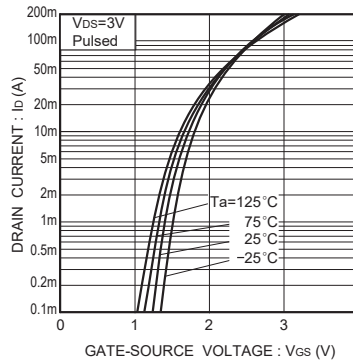


Fig.2 Typical transfer characteristics

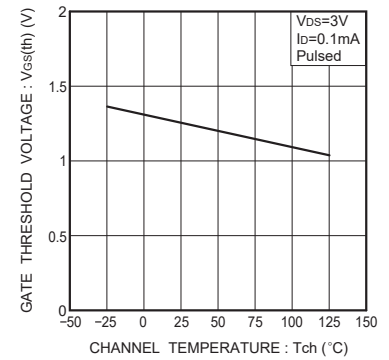


Fig.3 Gate threshold voltage vs. channel temperature

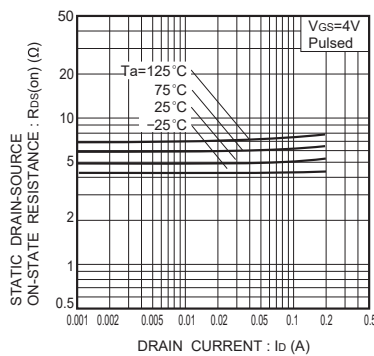


Fig.4 Static drain-source on-state resistance vs. drain current (I)

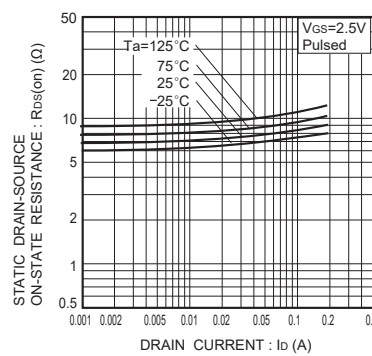


Fig.5 Static drain-source on-state resistance vs. drain current (II)

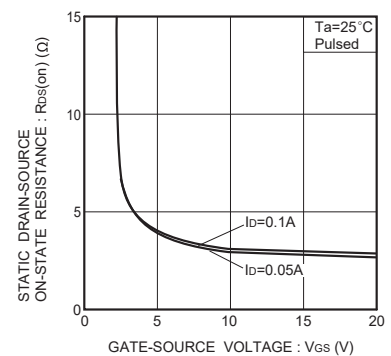


Fig.6 Static drain-source on-state resistance vs. gate-source voltage

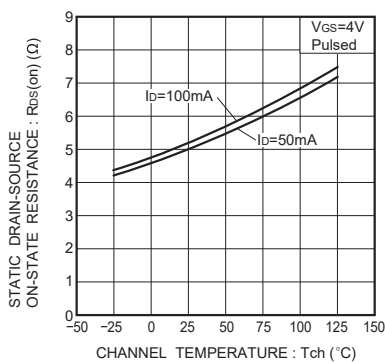


Fig.7 Static drain-source on-state resistance vs. channel temperature

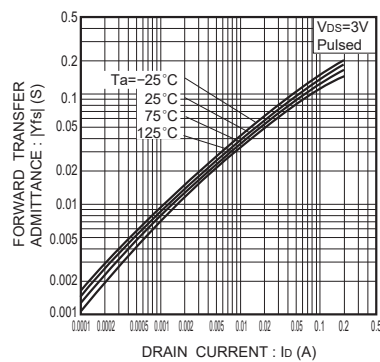


Fig.8 Forward transfer admittance vs. drain current

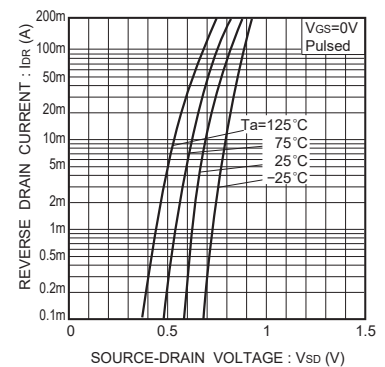


Fig.9 Reverse drain current vs. source-drain voltage (I)

RATINGS AND CHARACTERISTIC CURVES

■ Typical Characteristics

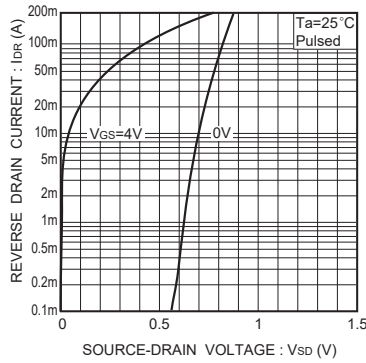


Fig.10 Reverse drain current vs. source-drain voltage (II)

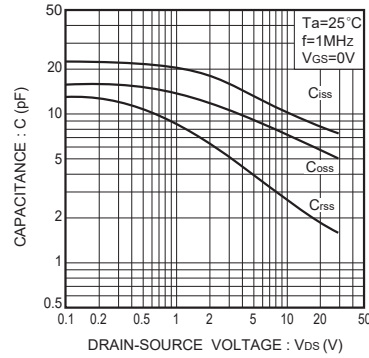


Fig.11 Typical capacitance vs. drain-source voltage

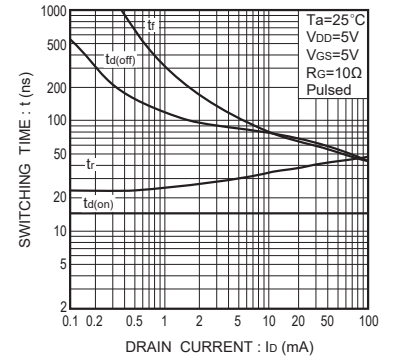


Fig.12 Switching characteristics
(See Figures 13 and 14 for the measurement circuit and resultant waveforms)

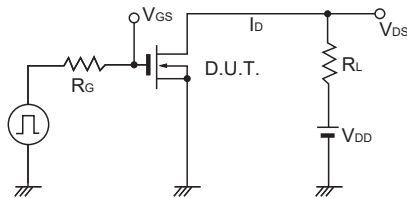


Fig.13 Switching time measurement circuit

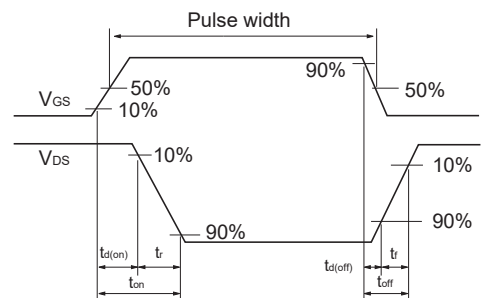


Fig.14 Switching time waveforms