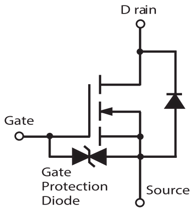
N Channel Enhancement MOSFET

multicomp PRO

RoHS Compliant



Features

- Low On-Resistance: $R_{DS\ (ON)}$
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- Low Input/Output Leakage
- ESD Protected 2KV HBM

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage -Continuous	V_{GS}	±20	
Drain Current -Continuous (Note:1)	I_D	300	mA
-Pulsed		800	
Power Dissipation (Note 1)	P_D	350	mW
Thermal Resistance. Junction- to-Ambient	R_{thJA}	357	°C/W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{stg}	-55 to 150	

Note.
Notes: 1. Device mounted on FR-4 PCB.

Electrical Characteristics Ta = 25°C

Characteristic	Symbol	Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage (Note.2)	V_{DSS}	I_D=100µA, V_{GS}=0V	60			V
Zero Gate Voltage Drain Current (Note.2)	I_{DSS}	V_{DS}=60V, V_{GS}=0V			1	uA
Gate-Body Leakage Current (Note.2)	I_{GSS}	V_{DS}=0V, V_{GS}=±20V			±10	nA
Gate Threshold Voltage (Note.2)	$V_{GS(th)}$	V_{DS}=10V, I_D=-1mA	1	1.6	2.5	V
Static Drain-Source On-Resistance (Note.2)	$R_{DS(On)}$	V_{GS}=10V, I_D=500mA			2	Ω
		V_{GS}=10V, I_D=50mA			3	
Forward Transfer Admittance (Note.2)	$\|Y_{fs}\|$	V_{GS}=10V, I_D=200A	80			ms
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=25V, f=1MHz			50	pF
Output Capacitance	C_{oss}				25	
Reverse Transfer Capacitance	C_{RSS}				5	
Total Gate Charge	Q_g	V_{GS}=4.5V, V_{DS}=15V, I_D=200mA			0.8	nC
Turn-On DelayTime	$t_{d(on)}$	I_D=200mA, V_{DS}=30V, R_G=10Ω, V_{GEN}=10V, R_L=150Ω			20	ns
Turn-Off DelayTime	$t_{d(off)}$				40	

Note: 2. Short duration test pulse used to minimize self-heating effect.

Typical Characterisitics

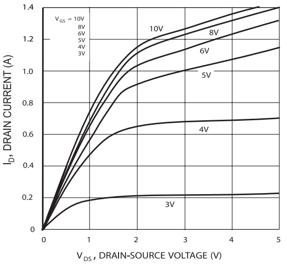


Fig. 1 Typical Output Characteristics

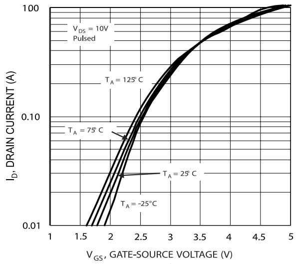


Fig. 2 Typical Transfer Characteristics

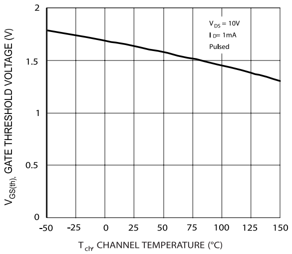


Fig. 3 Gate Threshold Voltage vs. Channel Tem perature

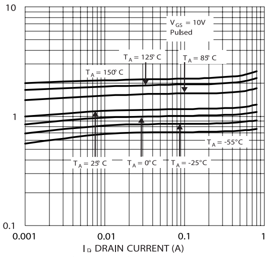


Fig. 4 Static Drain-Source On-Resistance Vs. Drain Current

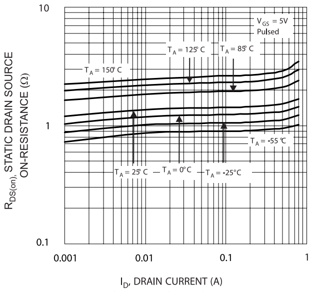


Fig. 5 Static Drain-Source On-Resistance vs. Drain Current

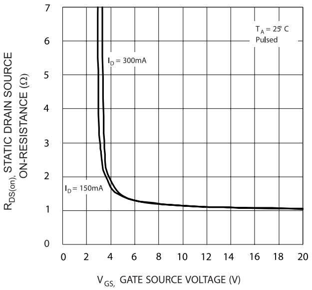


Fig. 6 Static Drain-Source On-Resistance vs. Gate-Source Volta ge

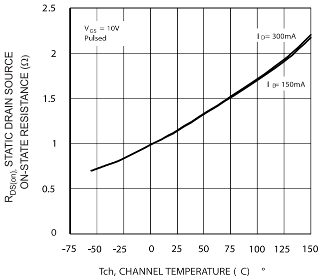


Fig. 7 Static Drain-Source On-State Resistance vs. Channel Tem perature

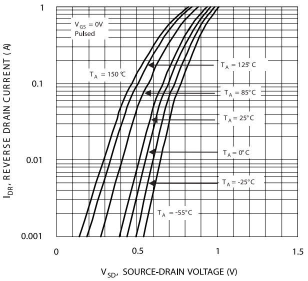


Fig. 8 Reverse Drain Current vs. Source-Drain Voltage

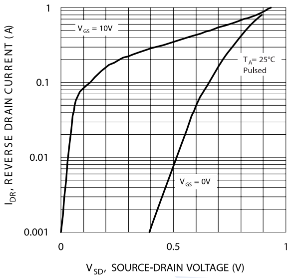


Fig. 9 Reverse Drain Current vs. Source-Drain Voltage

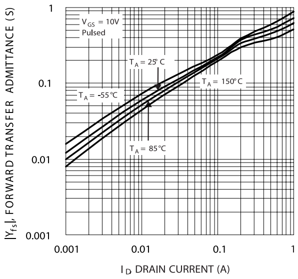
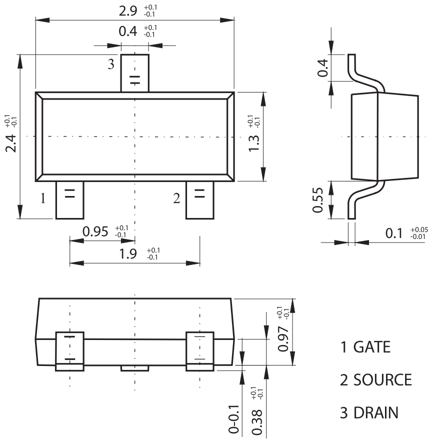


Fig.10 Forward Transfer Admittance vs. Drain Current

Diagram



Dimensions : Millimetres

Part Number Table

Description	Part Number
MOSFET, N Channel, 0.3A, 60V, SOT23	2N7002K

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