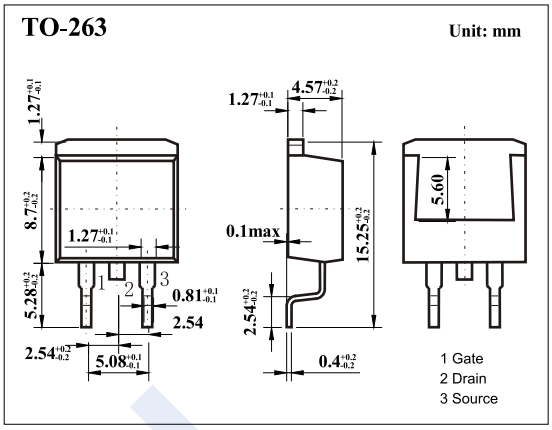
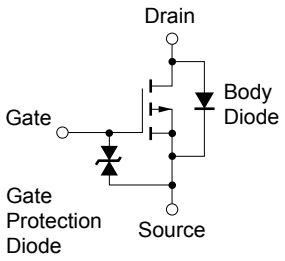
P-Channel MOSFET
2SJ602-ZJ



■ Features

- $V_{DS\ (V)}$ =-60V
- I_D =-20A
- $R_{DS(ON)}$ < 73mΩ (V_{GS} =-10V)
- $R_{DS(ON)}$ < 107mΩ (V_{GS} =-4V)
- Low Ciss: Ciss = 1300 pF (TYP.)



■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	±20	
Continuous Drain Current	I_D	-20	A
Pulsed Drain Current (Note.1)	I_{DM}	-50	
Single Avalanche Current (Note.2)	I_{AS}	-20	
Power Dissipation	P_D	40	W
		1.5	
Single Avalanche Energy (Note.2)	E_{AS}	40	mJ
Junction Temperature	T_J	150	℃
Junction Storage Temperature Range	T_{stg}	-55 to 150	

Note.1: PW ≤ 10us,Duty Cycle ≤ 1%

Note.2: Starting T_J = 25 °C,V_{DD}=-30V, R_G = 25Ω , V_{GS} = –20 V → 0

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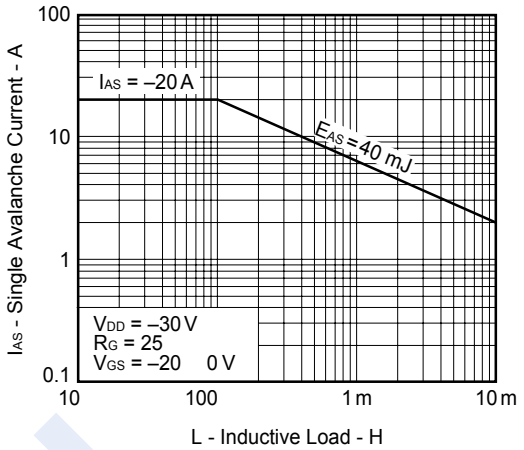
■ Electrical Characteristics Ta = 25℃

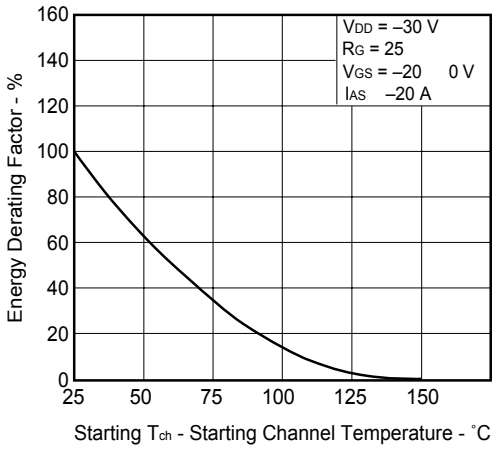
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=-250μA, V_{GS}=0V	-60			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-60V, V_{GS}=0V			-10	uA
Gate-Body leakage current	I_{GSS}	V_{DS}=0V, V_{GS}=±20V			±10	uA
Gate Cut off Voltage	$V_{GS(off)}$	V_{DS}=-10V,I_D=-1mA	-1.5		-2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=-10V, I_D=-10A			73	mΩ
		V_{GS}=-4V, I_D=-10A			107	
Forward Transconductance	g_{FS}	V_{DS}=-10V, I_D=-10A	8	16		S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-10V, f=1MHz		1300		pF
Output Capacitance	C_{oss}			240		
Reverse Transfer Capacitance	C_{rss}			100		
Total Gate Charge	Q_g	V_{GS}=-10V, V_{DS}=-48V, I_D=-20A		26		nC
Gate Source Charge	Q_{gs}			5		
Gate Drain Charge	Q_{gd}			7		
Turn-On DelayTime	$t_{d(on)}$	$V_{GS(on)}$=-10V, V_{DS}=-30V, I_D=-10A, R_G=0Ω		9		ns
Turn-On Rise Time	t_r			12		
Turn-Off DelayTime	$t_{d(off)}$			54		
Turn-Off Fall Time	t_f			15		
Body Diode Reverse Recovery Time	t_{rr}	I_F=-20A, V_{GS}=0, dI/dt=100A/μs		50		
Body Diode Reverse Recovery Charge	Q_{rr}			110		nC
Diode Forward Voltage	V_{SD}	I_F=-20A,V_{GS}=0V		-1		V

■ Typical Characterisitics

SINGLE AVALANCHE CURRENT vs. INDUCTIVE LOAD



SINGLE AVALANCHE ENERGY DERATING FACTOR



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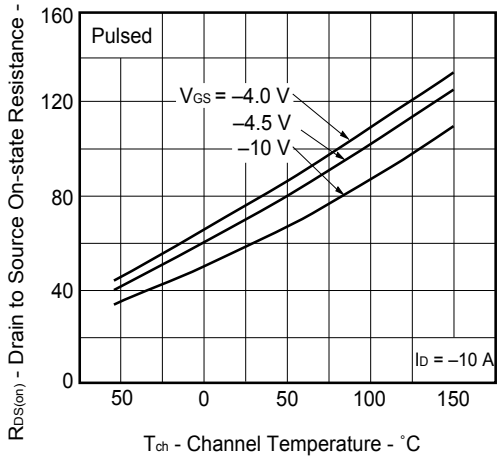
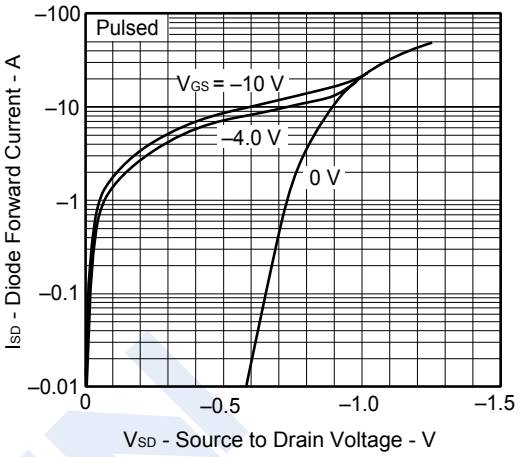
■ Typical Characterisitics

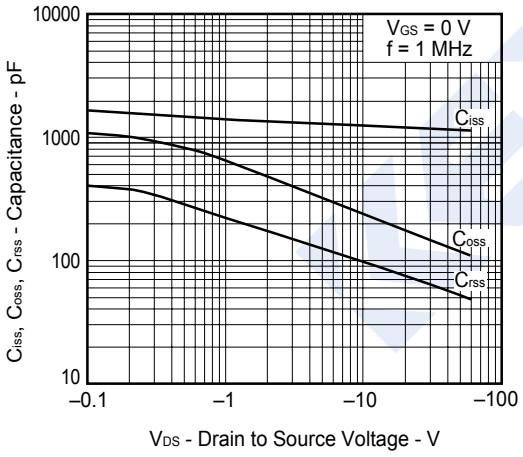
DRAIN TO SOURCE ON-STATE RESISTANCE vs. CHANNEL TEMPERATURE



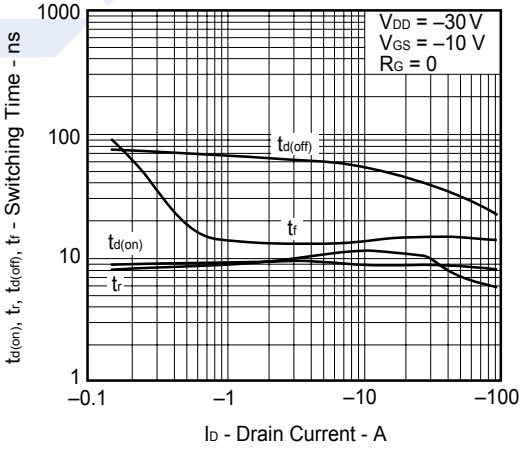
SOURCE TO DRAIN DIODE FORWARD VOLTAGE



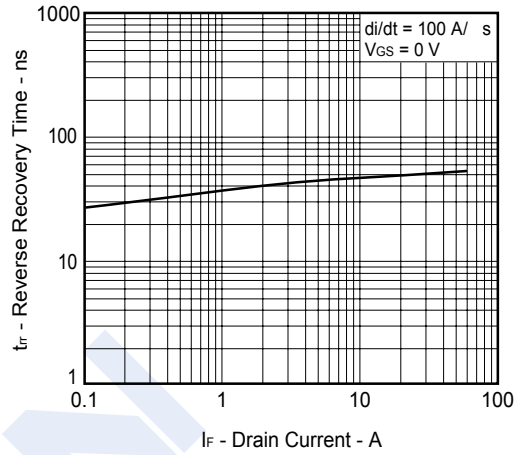
CAPACITANCE vs. DRAIN TO SOURCE VOLTAGE



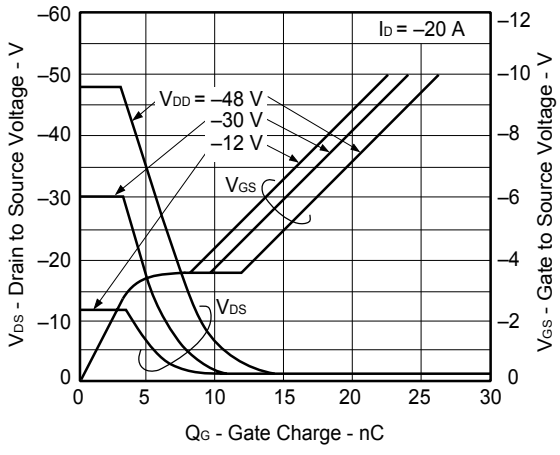
SWITCHING CHARACTERISTICS



REVERSE RECOVERY TIME vs. DRAIN CURRENT



DYNAMIC INPUT/OUTPUT CHARACTERISTICS



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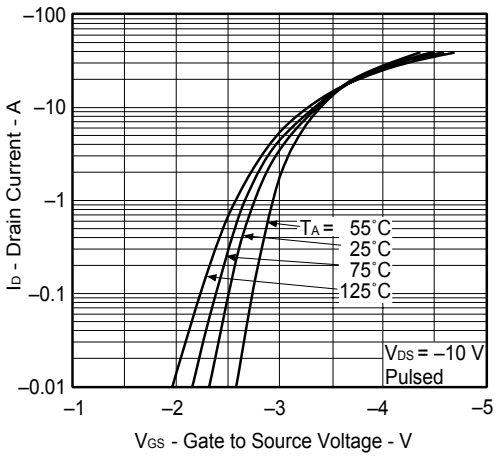
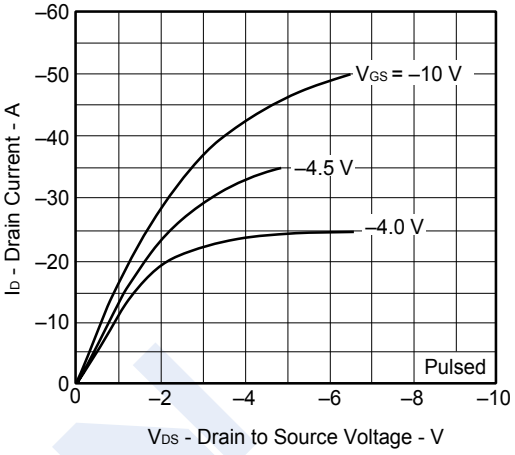
■ Typical Characterisitics

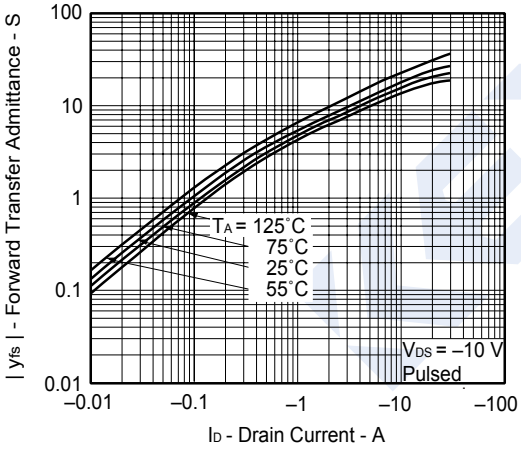
FORWARD TRANSFER CHARACTERISTICS



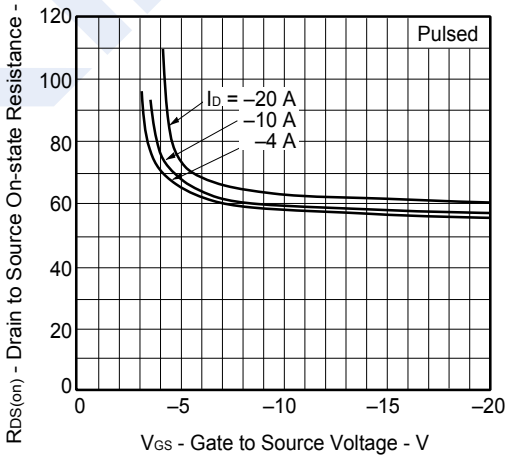
DRAIN CURRENT vs.
DRAIN TO SOURCE VOLTAGE



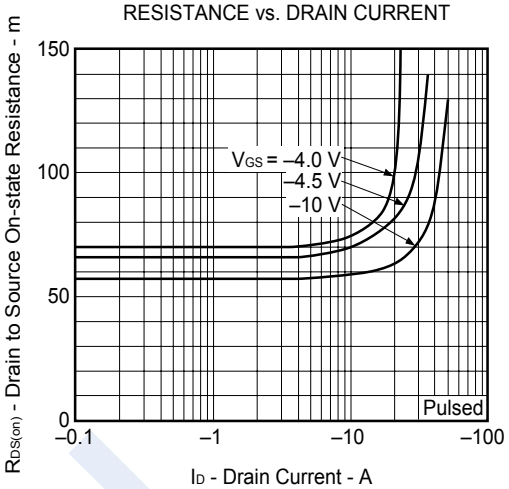
FORWARD TRANSFER ADMITTANCE vs.
DRAIN CURRENT



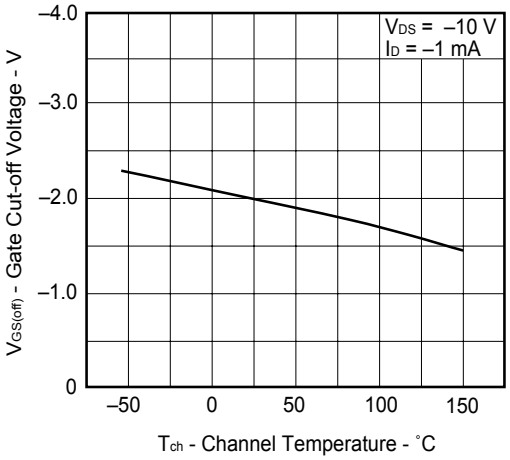
DRAIN TO SOURCE ON-STATE RESISTANCE vs.
GATE TO SOURCE VOLTAGE



DRAIN TO SOURCE ON-STATE
RESISTANCE vs. DRAIN CURRENT



GATE CUT-OFF VOLTAGE vs.
CHANNEL TEMPERATURE



P-Channel MOSFET

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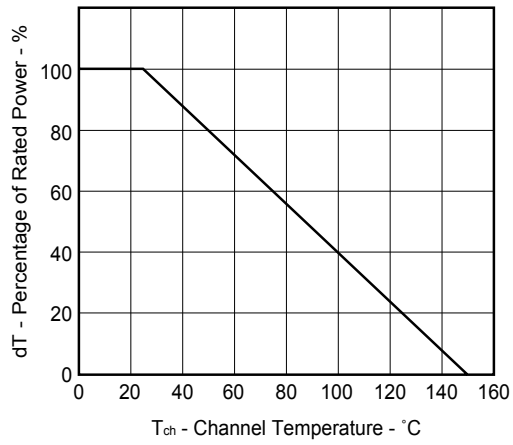
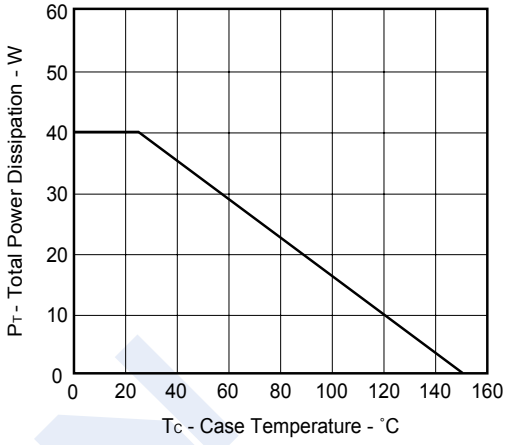
■ Typical Characterisitics

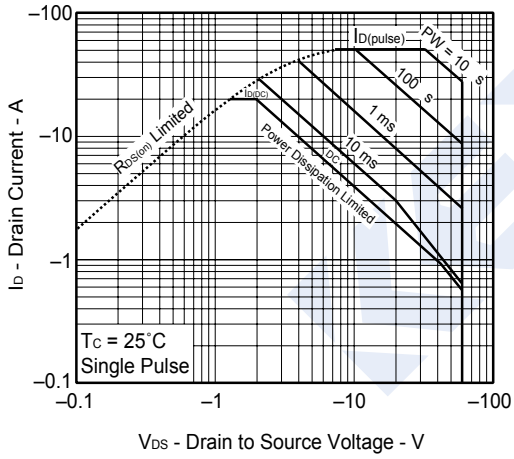
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



TOTAL POWER DISSIPATION vs. CASE TEMPERATURE



FORWARD BIAS SAFE OPERATING AREA



TRANSIENT THERMAL RESISTANCE vs. PULSE WIDTH