

P-channel 4V (G-S) MOSFET

FEATURES

- Low On Resistance
- Ultra High Speed Switching
- 4V Driving
- EU RoHS Compliant, Pb Free

APPLICATIONS

Switching

PRODUCT NAME

PRODUCT NAME	PACKAGE	ORDER UNIT
XP202A0003MR-G	SOT-23	3,000/Reel

*The “-G” suffix indicates that the products are Halogen and Antimony free as well as being fully RoHS compliant.

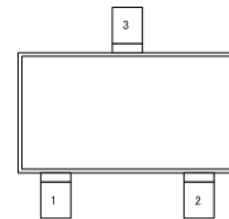
ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNITS
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current (DC)	I_D	-3	A
Drain Current(Pulse) ^(*1)	I_{DP}	-12	A
Channel Power Dissipation ^(*2)	P_d	1	W
Channel Temperature	T_{ch}	+150	
Storage Temperature	T_{stg}	- 55 ~ +150	

^(*1)PW 10 μ s, duty cycle 1%

^(*2)Ceramic Board (900mm² × 0.8mm) Mounting

PIN CONFIGURATION



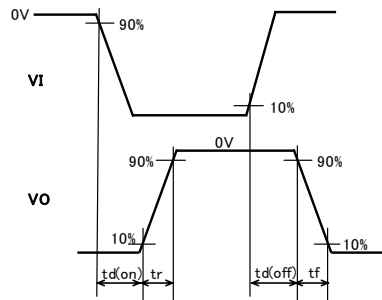
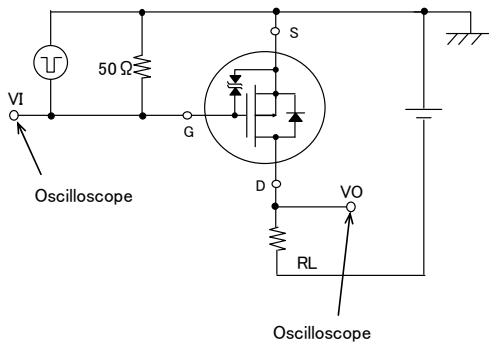
1. Gate
2. Source
3. Drain

SOT-23(TOP VIEW)

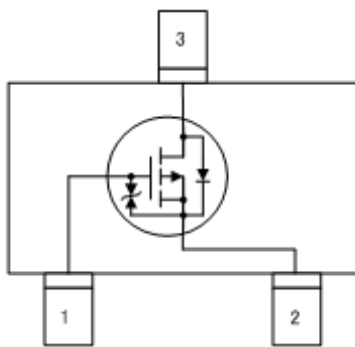
ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN.	TYP.	MAX.	
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1mA, V_{GS} = 0V$	-30	-	-	V
Drain-Source Cut-Off Current	I_{DSS}	$V_{DS} = -30V, V_{GS} = 0V$	-	-	-1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 16V, V_{DS} = 0V$	-	-	± 10	μA
Gate-Source Cut-Off Voltage	$V_{GS(off)}$	$V_{DS} = -10V, I_D = -1mA$	-1.2	-	-2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10V, I_D = -3A$	-	8.0	-	S
Drain-Source ON Resistance	$R_{DS(ON)1}$	$I_D = -1.5A, V_{GS} = -10V$	-	45	-	m Ω
	$R_{DS(ON)2}$	$I_D = -1.0A, V_{GS} = -4.5V$	-	67	-	m Ω
	$R_{DS(ON)3}$	$I_D = -1.0A, V_{GS} = -4V$	-	76	-	m Ω
Input Capacity	C_{iss}	$V_{DS} = -10V, f = 1MHz$	-	435	-	pF
Output Capacity	C_{oss}	$V_{DS} = -10V, f = 1MHz$	-	110	-	pF
Feedback capacity	C_{rss}	$V_{DS} = -10V, f = 1MHz$	-	85	-	pF
Turn on Delay time	$t_{d(on)}$	$I_D = -1A$	-	6	-	ns
Rise Time	t_r	$I_D = -1A$	-	12	-	ns
Turn off Delay Time	$t_{d(off)}$	$I_D = -1A$	-	28	-	ns
Fall Time	t_f	$I_D = -1A$	-	10	-	ns
All Gate Charge Amount	Q_g	$V_{DS} = -15V, V_{GS} = -10V, I_D = -3A$	-	10	-	nC
Gate Source Charge Amount	Q_{gs}	$V_{DS} = -15V, V_{GS} = -10V, I_D = -3A$	-	1.2	-	nC
Gate Drain Charge Amount	Q_{gd}	$V_{DS} = -15V, V_{GS} = -10V, I_D = -3A$	-	2.2	-	nC
Diode Forward Voltage	V_{SD}	$I_S = -3A, V_{GS} = 0V$	-	-0.8	-1.2	V

SWITCHING-TIME TEST CIRCUIT

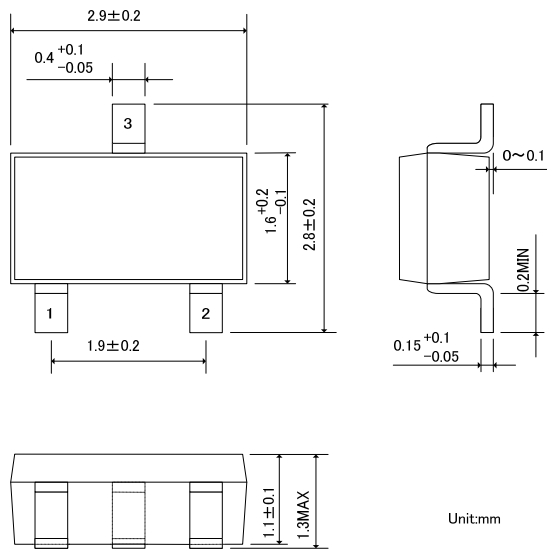


EQUIVALENT CIRCUIT



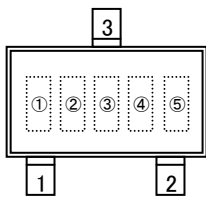
PACKAGING INFORMATION

SOT-23



Unit:mm

MARKING RULE



represents product series

MARK	PRODUCT SERIES
6	XP202*****-G

represents product group and number

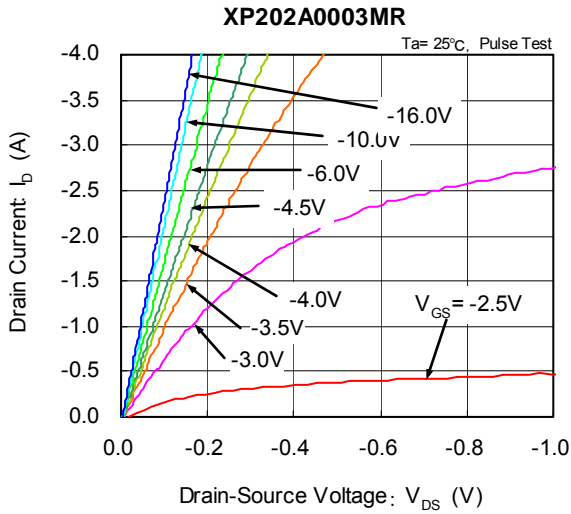
MARK		PRODUCT GROUP	PRODUCT NUMBER	PRODUCT SERIES
A	D	00	03	XP202A0003**-G

, represents production lot number

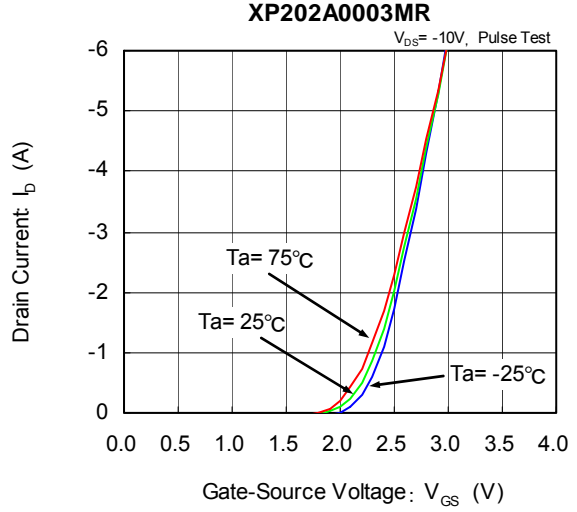
01 to 09, 0A to 0Z, 11 to 9Z, A1 to A9, AA to Z9, ZA to ZZ repeated (G, I, J, O, Q, W excluded)

TYPICAL PERFORMANCE CHARACTERISTICS

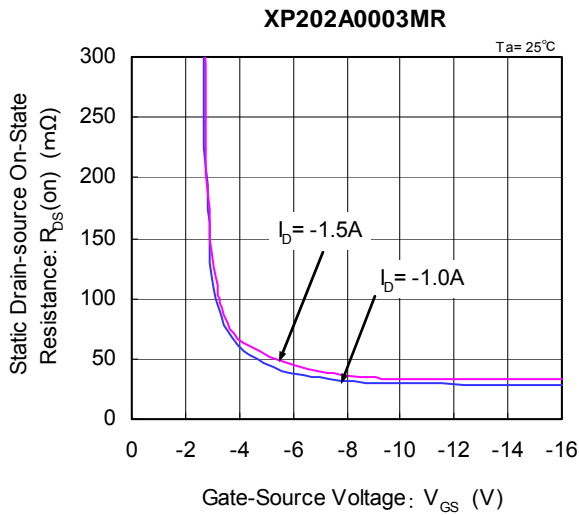
(1) Drain Current vs. Drain-Source Voltage



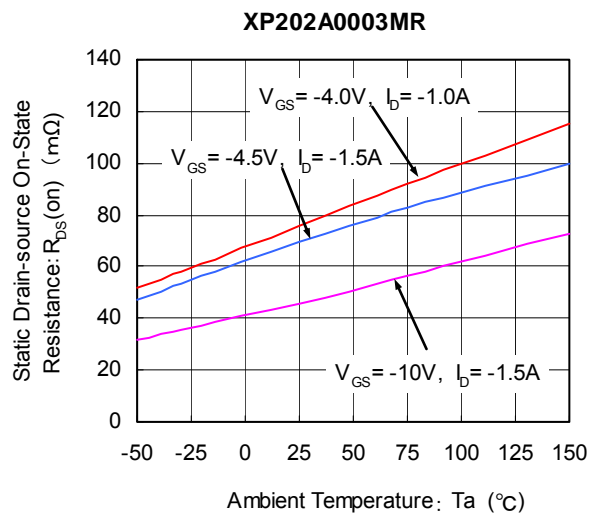
(2) Drain Current vs. Drain-Source Voltage



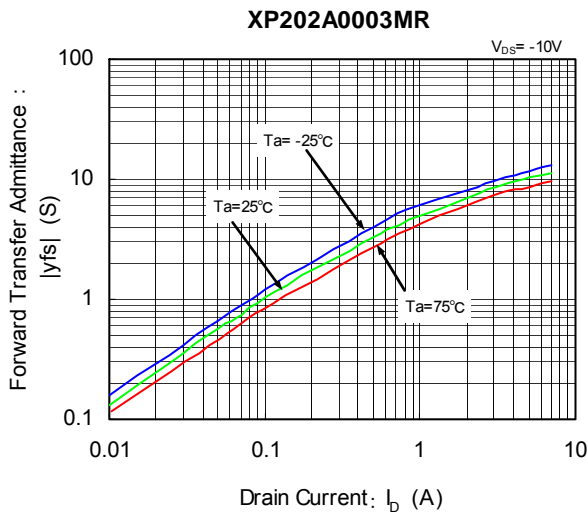
(3) Drain-Source On-State Resistance vs. Gate-Source Voltage



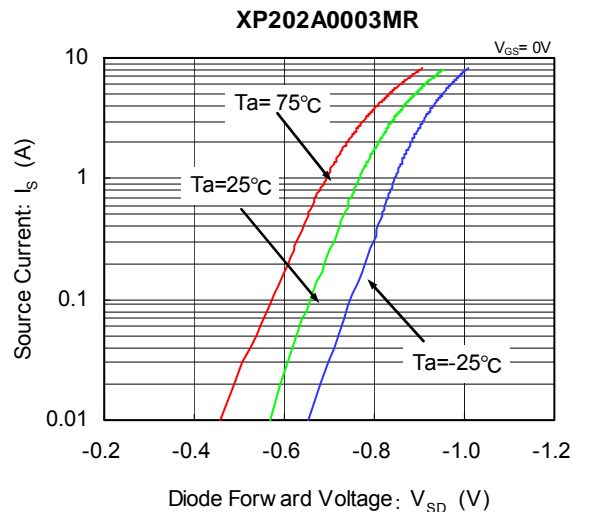
(4) Drain-Source On-State Resistance vs. Ambient Temperature



(5) Forward Transfer Admittance vs. Drain Current

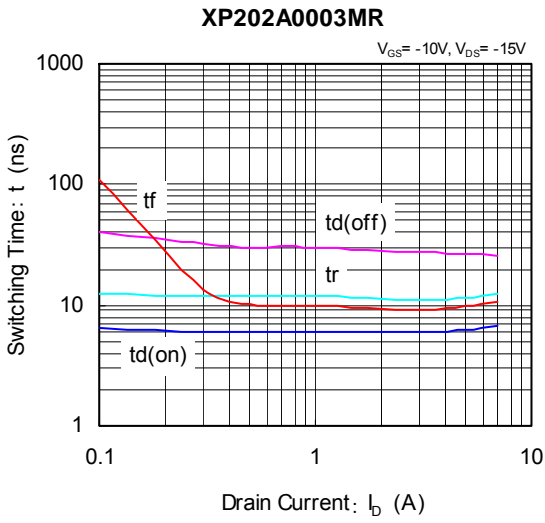


(6) Source Current vs. Diode Forward Voltage

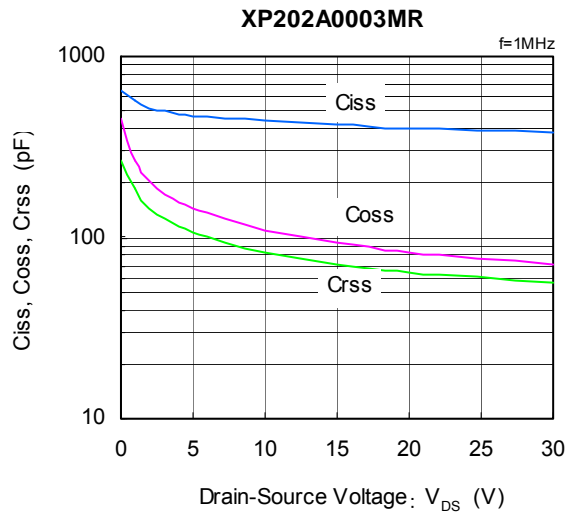


TYPICAL PERFORMANCE CHARACTERISTICS

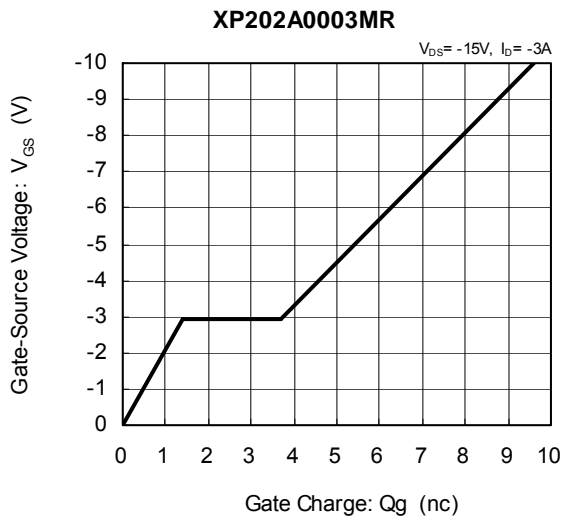
(7) Switching Time vs. Drain Current



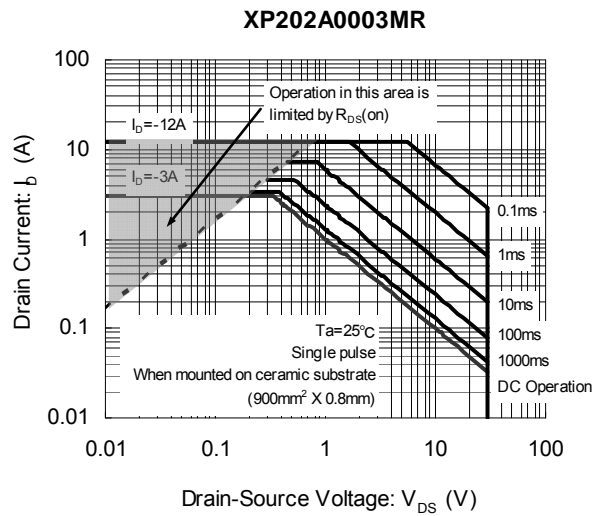
(8) $C_{iss}, C_{oss}, C_{rss}$ vs. Drain-Source Voltage



(9) Gate-Source Voltage vs. Gate Charge



(10) Area of Safe Operation



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