

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 denotes Halogen and Antimony free as well as being fully EU RoHS compliant.

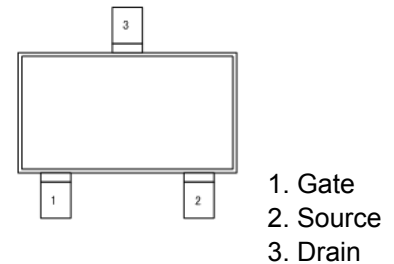
ABSOLUTE MAXIMUM RATINGS

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	°C
Storage Temperature	T_{stg}	- 55 ~ +150	°C

(*1) $PW \leq 10 \mu s$, duty cycle $\leq 1\%$

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

PIN CONFIGURATION



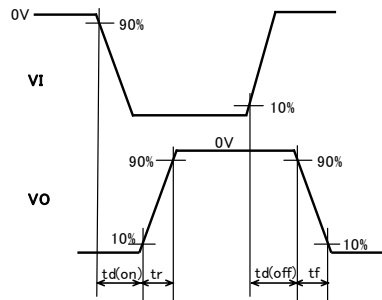
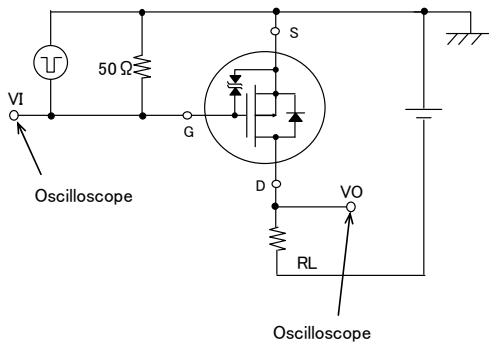
SOT-23(TOP VIEW)

1. Gate
2. Source
3. Drain

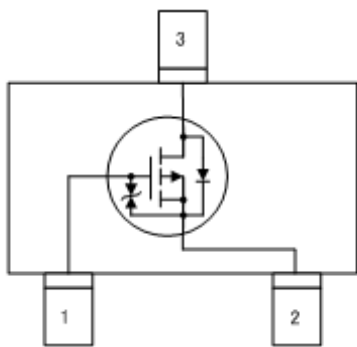
ELECTRICAL CHARACTERISTICS

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

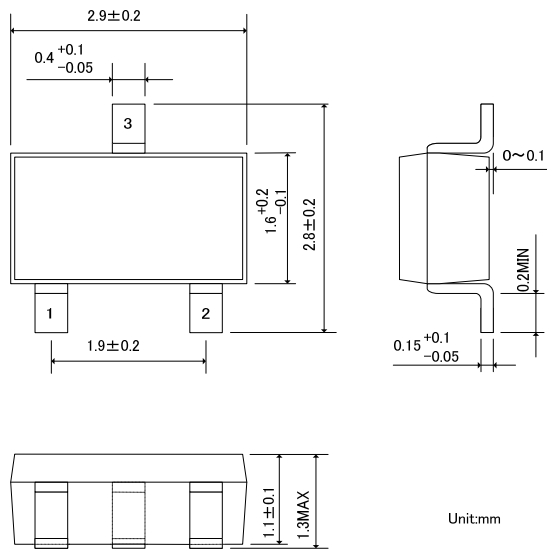


EQUIVALENT CIRCUIT

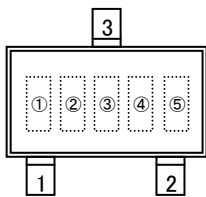


PACKAGING INFORMATION

SOT-23



MARKING RULE



① represents product series

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

② ③ represents product group and number

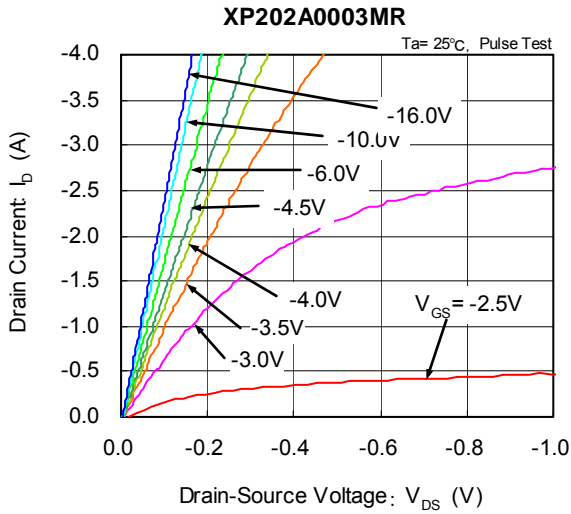
MARK		PRODUCT GROUP	PRODUCT NUMBER	PRODUCT SERIES
②	③			
A	D	00	03	XP202A0003**-G

④, ⑤ represents production lot number

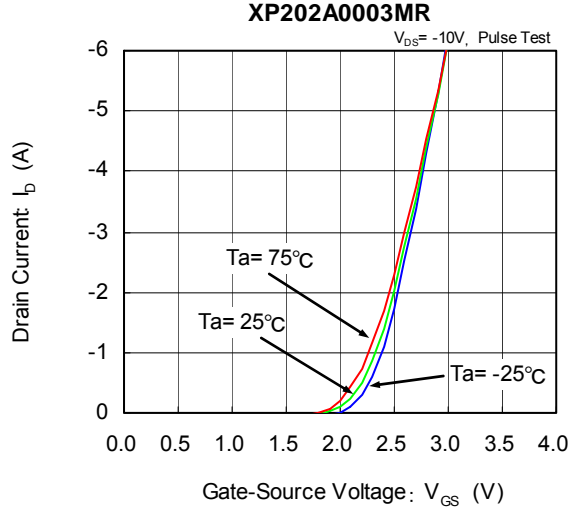
01 to 09, 0A to 0Z, 11 to 9Z, A1 to A9, AA to Z9, ZA to ZZ repeated (G, I, J, O, Q, W excluded)

TYPICAL PERFORMANCE CHARACTERISTICS

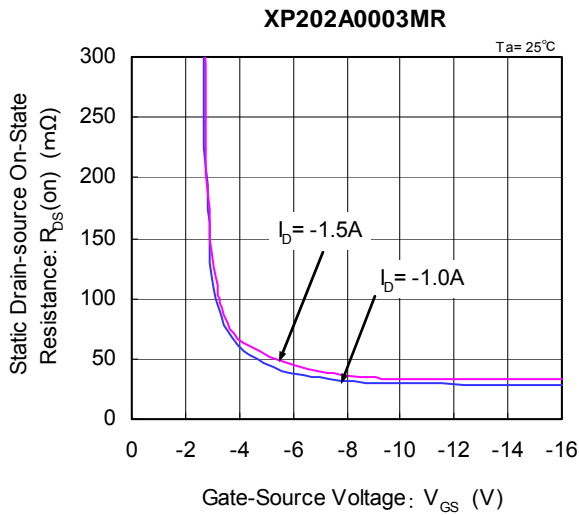
(1) Drain Current vs. Drain-Source Voltage



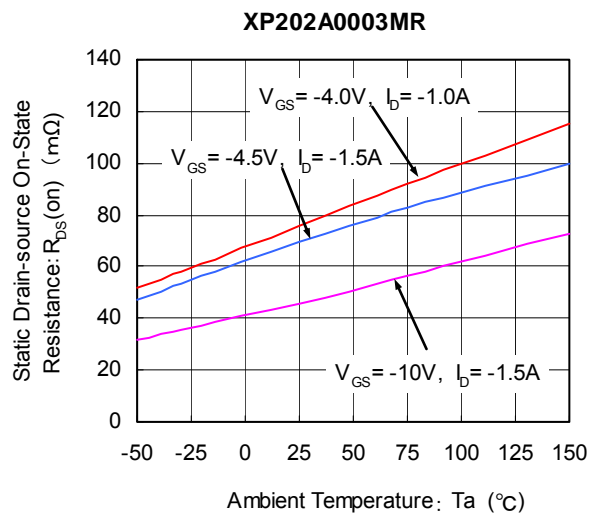
(2) Drain Current vs. Drain-Source Voltage



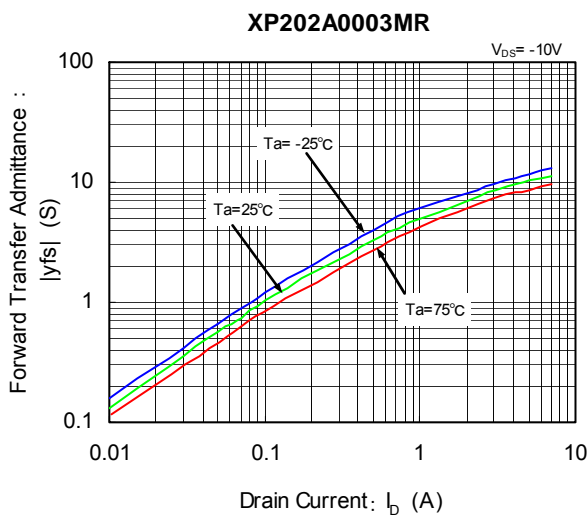
(3) Drain-Source On-State Resistance vs. Gate-Source Voltage



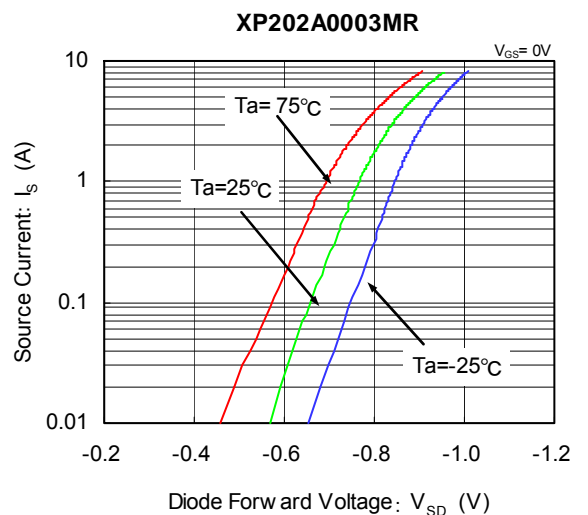
(4) Drain-Source On-State Resistance vs. Ambient Temperature



(5) Forward Transfer Admittance vs. Drain Current

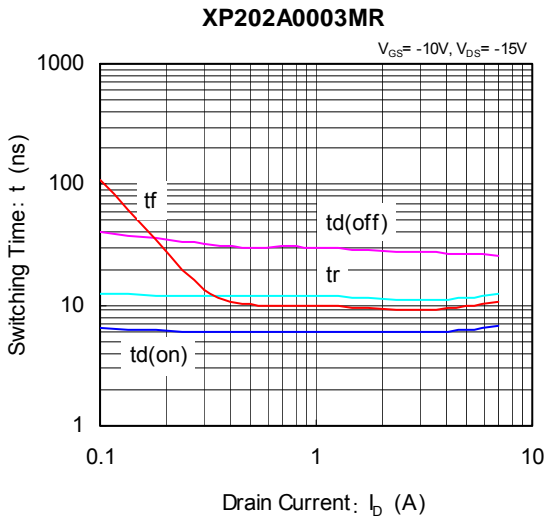


(6) Source Current vs. Diode Forward Voltage

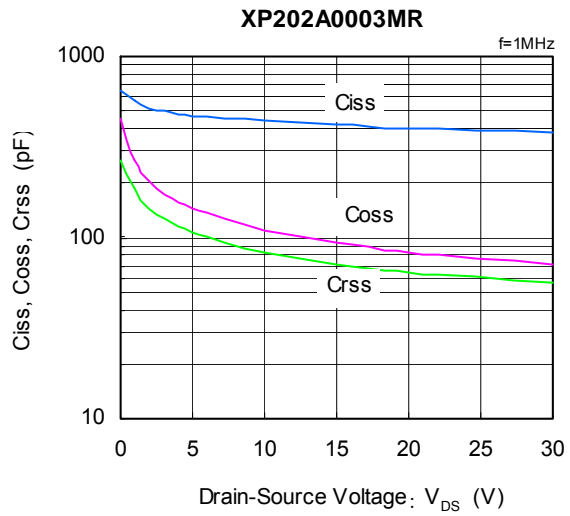


TYPICAL PERFORMANCE CHARACTERISTICS

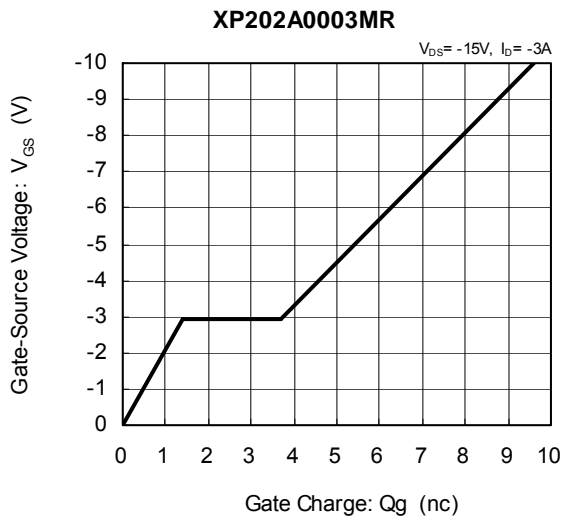
(7) Switching Time vs. Drain Current



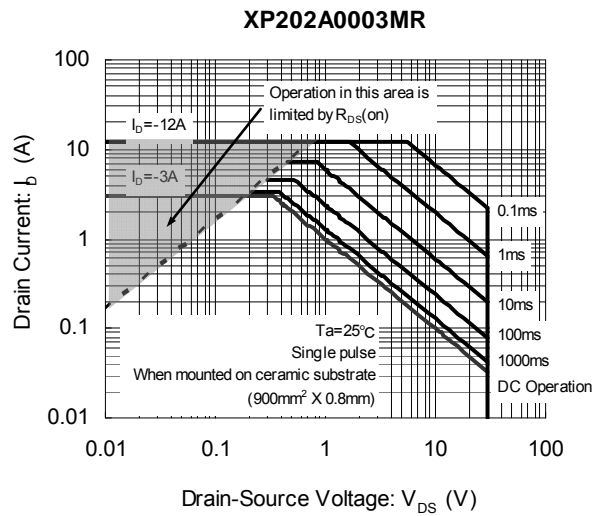
(8) Ciss, Coss, Crss vs. Drain-Source Voltage



(9) Gate-Source Voltage vs. Gate Charge



(10) Area of Safe Operation



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