

Ordering number : ENN7178A

P-Channel Silicon MOSFET



**2SJ612**

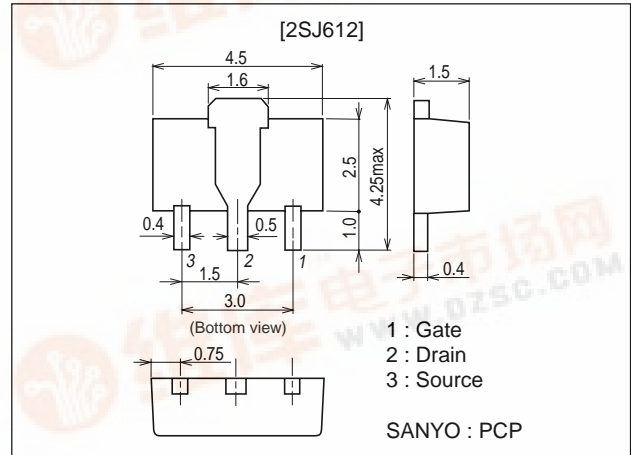
**Ultrahigh-Speed Switching Applications**

**Features**

- Low ON-resistance.
- Ultrahigh-speed switching.
- 2.5V drive.

**Package Dimensions**

unit : mm  
2062A



**Specifications**

**Absolute Maximum Ratings** at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		-20	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±10	V
Drain Current (DC)	I <sub>D</sub>		-2.5	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-10	A
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (250mm <sup>2</sup> X0.8mm)	1.0	W
		Tc=25°C	3.5	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

**Electrical Characteristics** at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =-1mA, V <sub>GS</sub> =0	-20			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-20V, V <sub>GS</sub> =0			-1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±8V, V <sub>DS</sub> =0			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-1mA	-0.4		-1.3	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-1.3A	2.0	2.8		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-1.3A, V <sub>GS</sub> =-4V		190	245	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-0.7A, V <sub>GS</sub> =-2.5V		250	350	mΩ

Marking : JS

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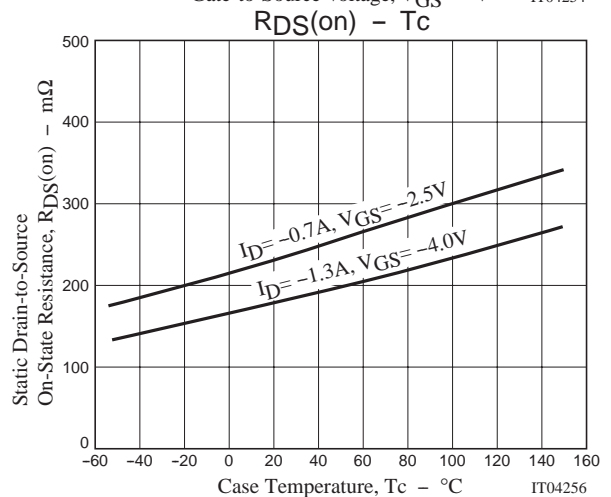
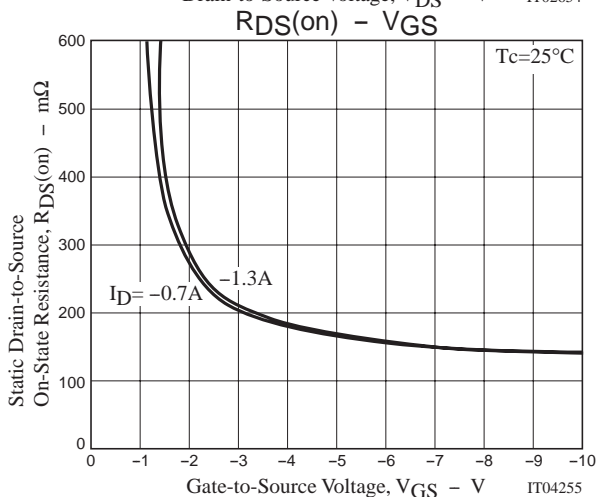
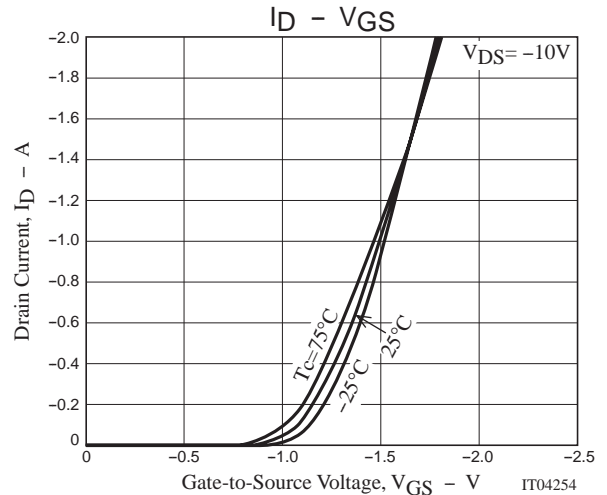
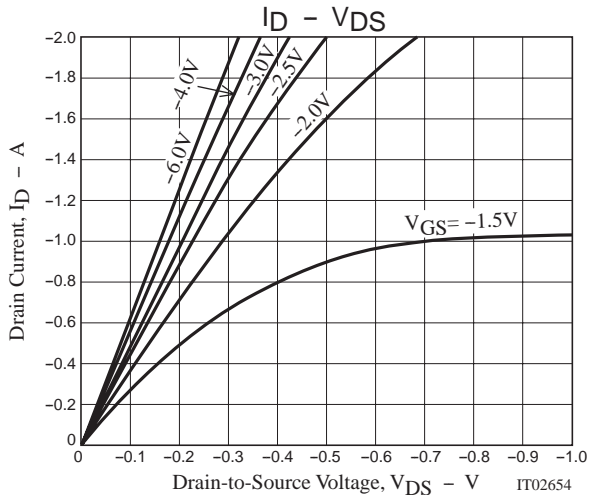
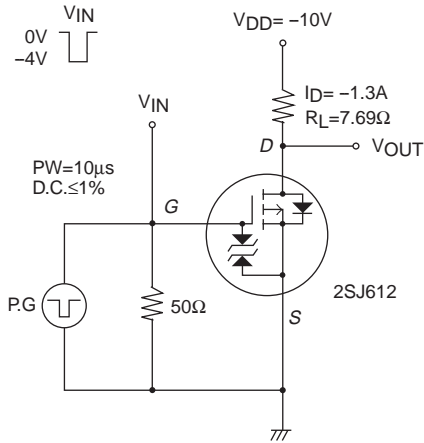


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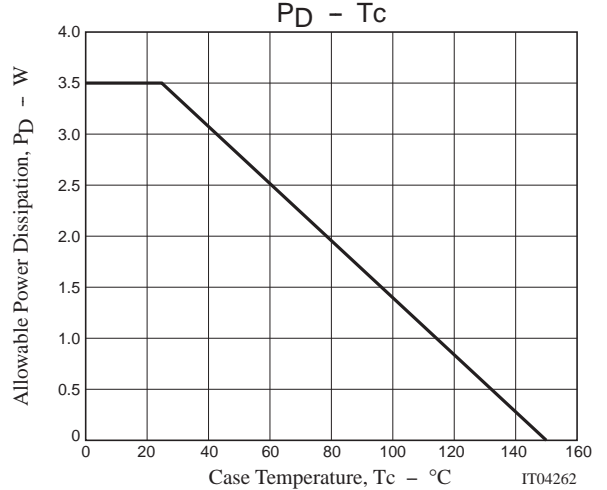
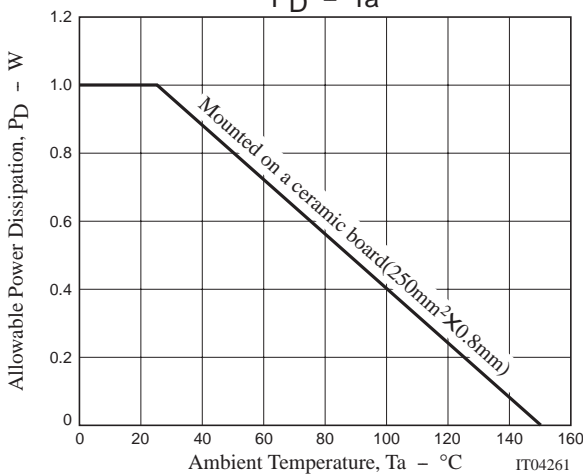
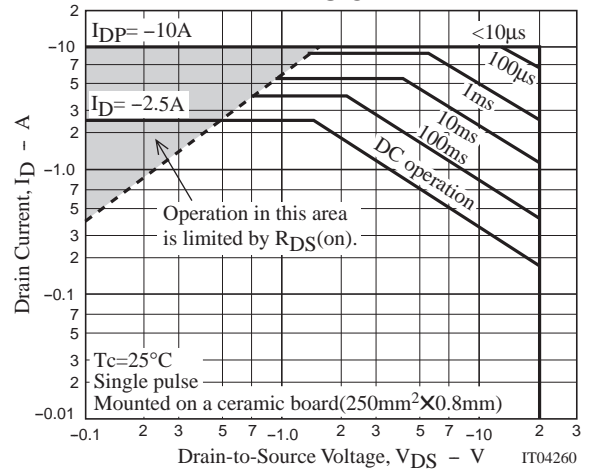
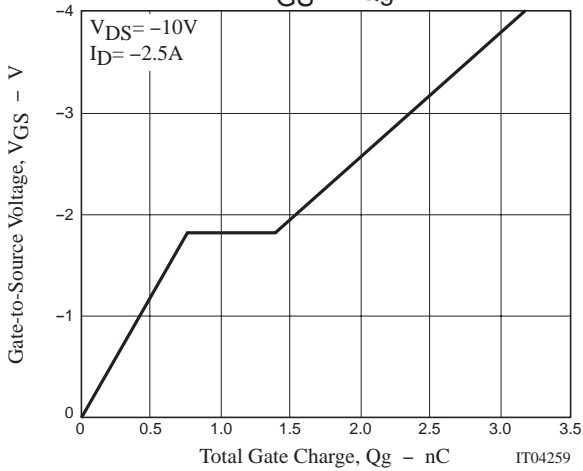
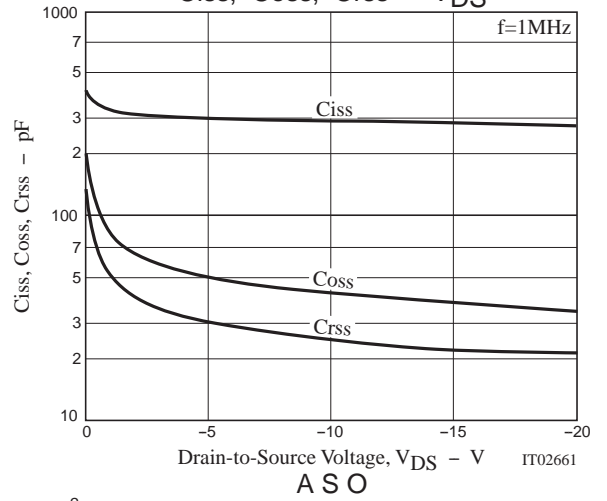
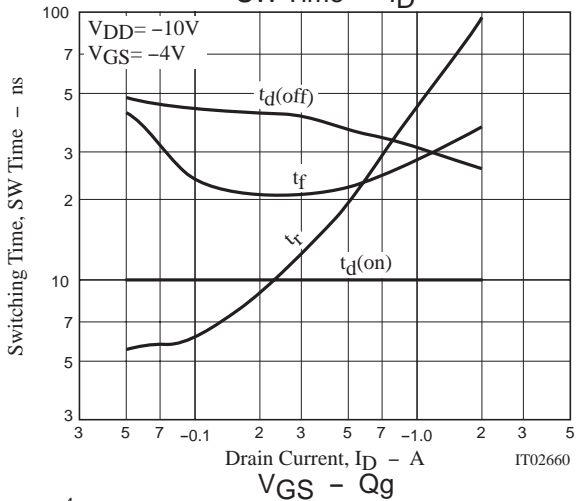
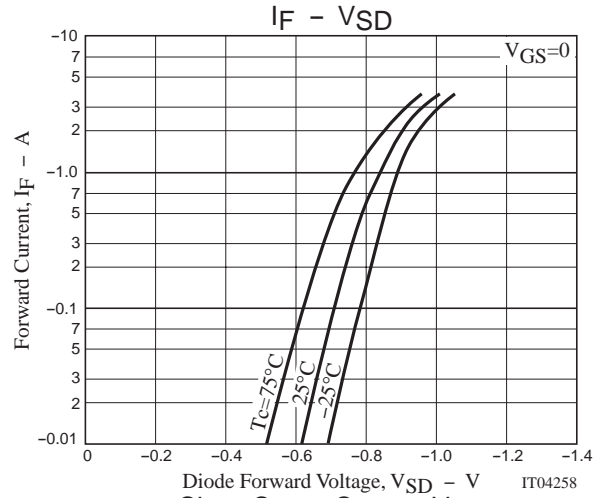
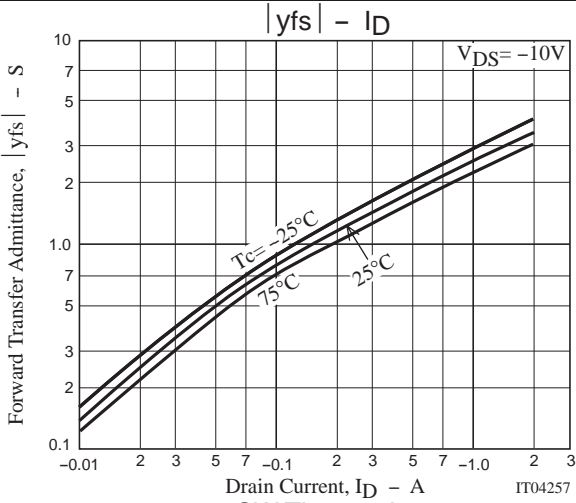
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=-10V, f=1MHz$		290		pF
Output Capacitance	Coss	$V_{DS}=-10V, f=1MHz$		40		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=-10V, f=1MHz$		25		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		10		ns
Rise Time	$t_r$	See specified Test Circuit.		60		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		27		ns
Fall Time	$t_f$	See specified Test Circuit.		32		ns
Total Gate Charge	Qg	$V_{DS}=-10V, V_{GS}=-4V, I_D=-2.5A$		3.2		nC
Gate-to-Source Charge	Qgs	$V_{DS}=-10V, V_{GS}=-4V, I_D=-2.5A$		0.8		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=-10V, V_{GS}=-4V, I_D=-2.5A$		0.6		nC
Diode Forward Voltage	$V_{SD}$	$I_S=-2.5A, V_{GS}=0$		-0.96	-1.5	V

## Switching Time Test Circuit



# 2SJ612



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