

**2SJ578**

Ultrahigh-Speed Switching Applications

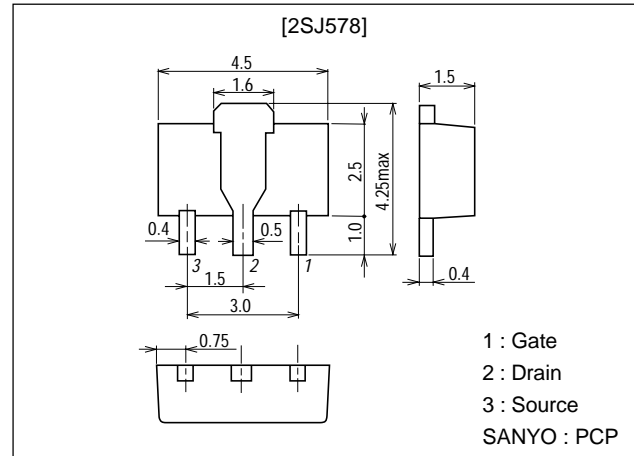
Features

- Low ON resistance.
- Ultrahigh-speed switching.
- 4V drive.

Package Dimensions

unit:mm

2062A



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		-60	V
Gate-to-Source Voltage	V_{GSS}		± 20	V
Drain Current (DC)	I_D		-1	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	-4	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (250mm ² ×0.8mm)	1.3	W
		$T_c = 25^\circ C$	3.5	W
Channel Temperature	T_{ch}		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1mA$, $V_{GS} = 0$	-60			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -60V$, $V_{GS} = 0$			-10	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 16V$, $V_{DS} = 0$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10V$, $I_D = -1mA$	-1.0		-2.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10V$, $I_D = -0.5A$	0.6	0.9		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -0.5A$, $V_{GS} = -10V$		980	1300	$m\Omega$
	$R_{DS(on)2}$	$I_D = -0.3A$, $V_{GS} = -4V$		1300	1800	$m\Omega$

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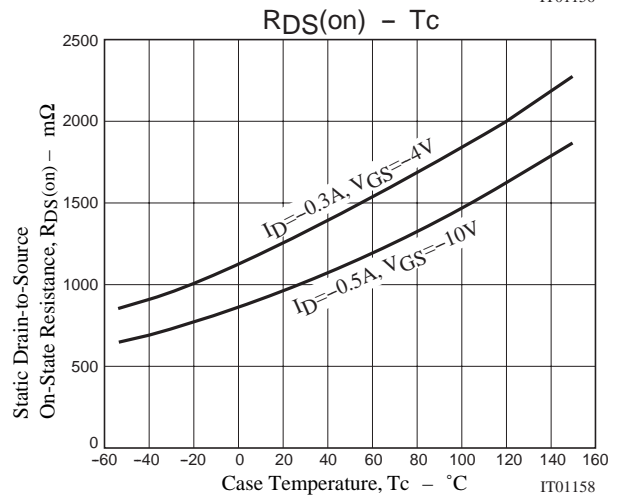
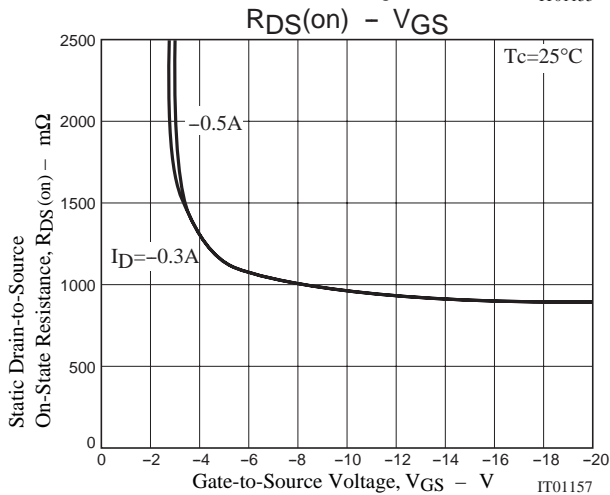
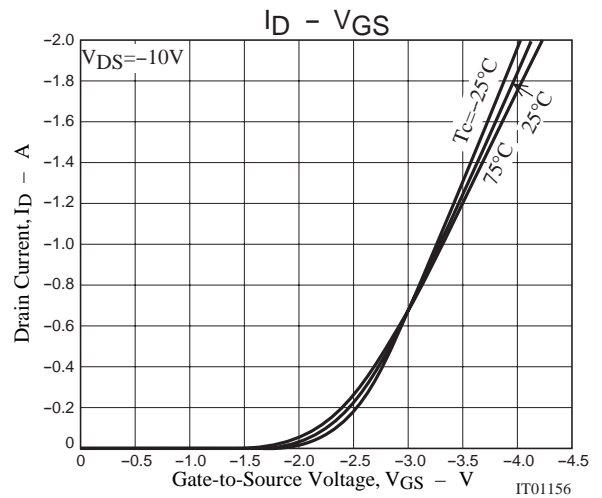
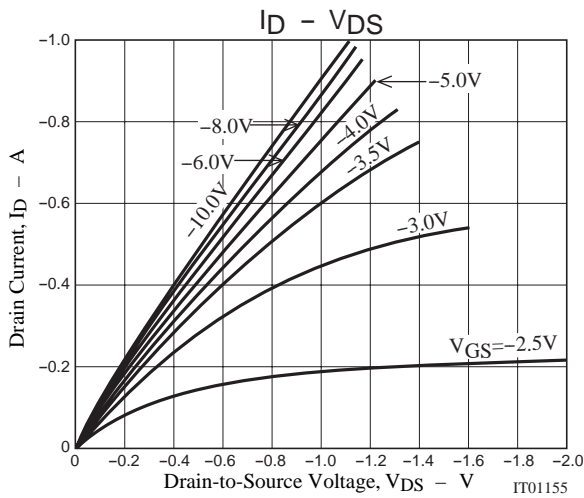
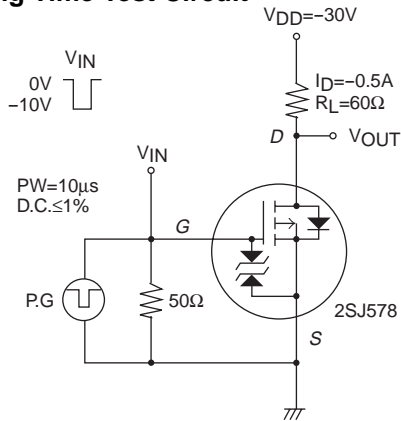
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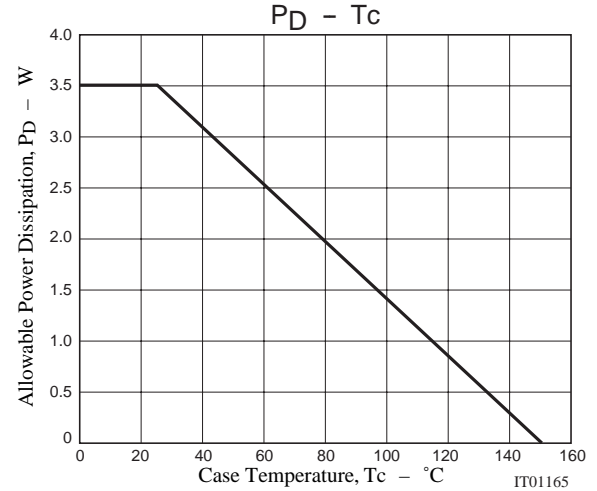
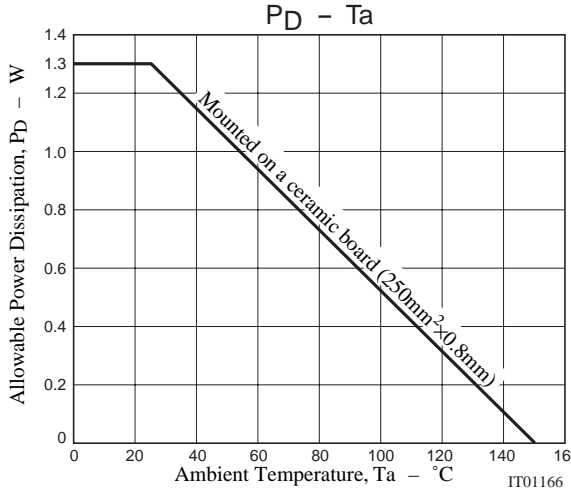
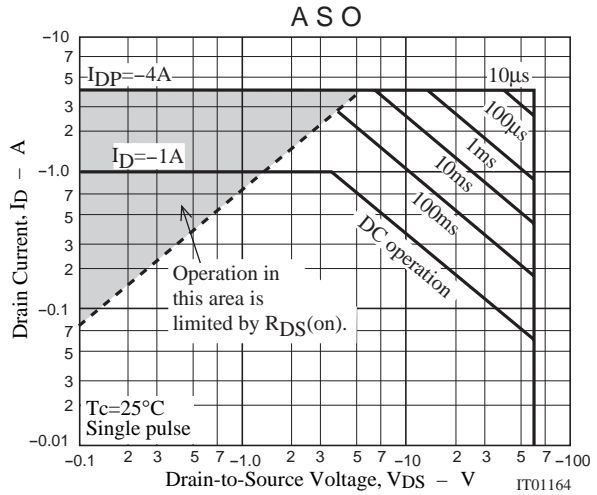
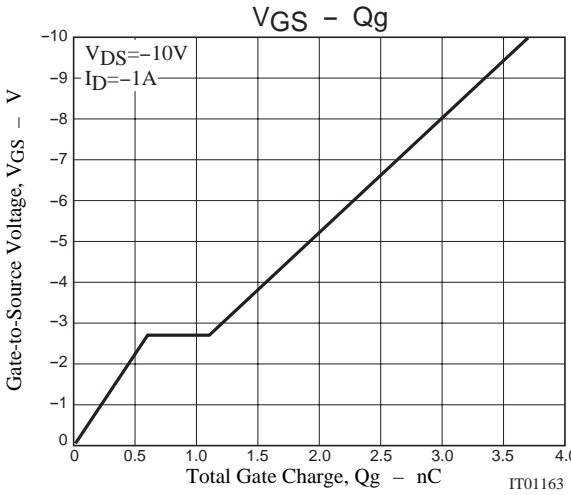
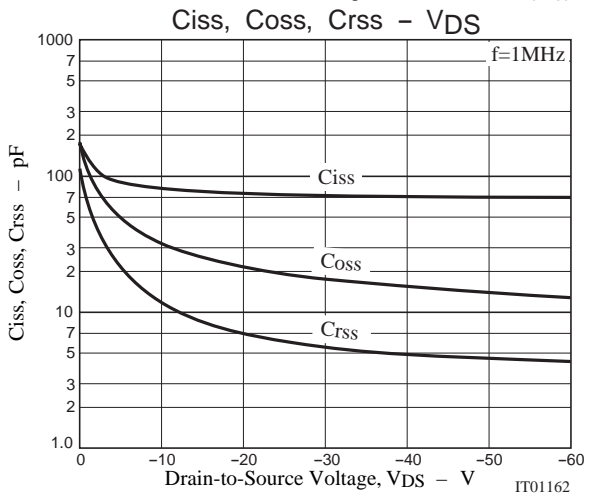
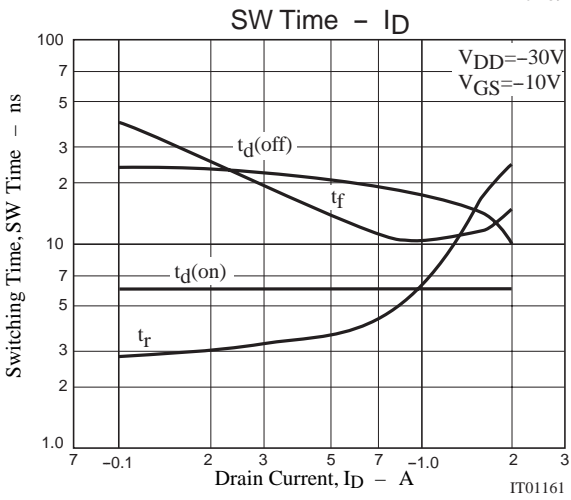
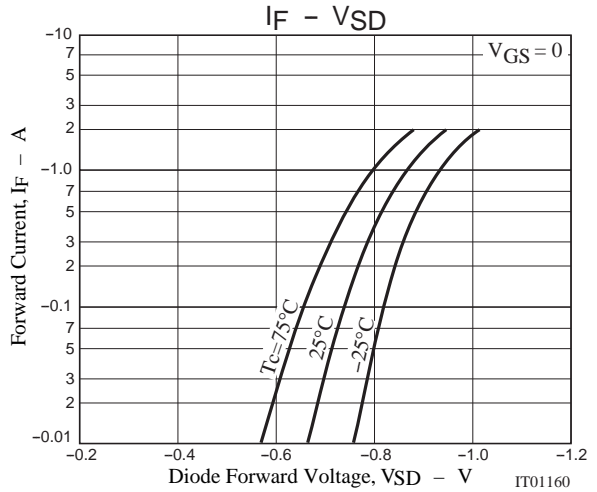
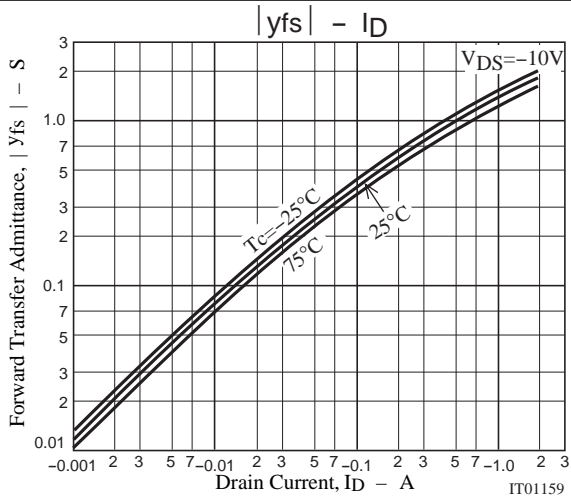
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	C_{iss}	$V_{DS}=-20V, f=1MHz$		75		pF
Output Capacitance	C_{oss}	$V_{DS}=-20V, f=1MHz$		22		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=-20V, f=1MHz$		7		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		6		ns
Rise Time	t_r	See specified Test Circuit		4		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		21		ns
Fall Time	t_f	See specified Test Circuit		14		ns
Total Gate Charge	Q_g	$V_{DS}=-10V, V_{GS}=-10V, I_D=-1A$		3.7		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=-10V, V_{GS}=-10V, I_D=-1A$		0.6		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=-10V, V_{GS}=-10V, I_D=-1A$		0.5		nC
Diode Forward Voltage	V_{SD}	$I_S=-1A, V_{GS}=0$		-0.86	-1.2	V

Marking : JP

Switching Time Test Circuit



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