



## Ultrahigh-Speed Switching Applications

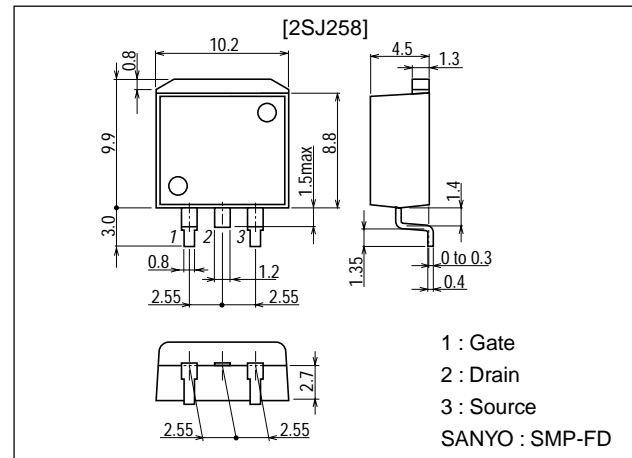
### Features

- Low ON resistance.
- Ultrahigh-speed switching.
- Low-voltage drive.
- Surface mount type device making the following possible.
  - Reduction in the assembling time for 2SJ258-applied equipment.
  - High-density surface mount applications.
  - Small size of 2SJ258-applied equipment.

### Package Dimensions

unit:mm

2090A



### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		-30	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		-12	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10 \mu s$ , duty cycle $\leq 1\%$	-48	A
Allowable Power Dissipation	$P_D$		1.65	W
		$T_c = 25^\circ C$	60	W
Channel Temperature	$T_{ch}$		150	$^\circ C$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ C$

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1 mA$ , $V_{GS} = 0$	-30			V
Gate-to-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G = \pm 100 \mu A$ , $V_{DS} = 0$	$\pm 20$			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -30V$ , $V_{GS} = 0$			-100	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 16V$ , $V_{DS} = 0$			$\pm 10$	$\mu A$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10V$ , $I_D = -1 mA$	-1.0		-2.0	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10V$ , $I_D = -6A$	5	8		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)}$	$I_D = -6A$ , $V_{GS} = -10V$		0.07	0.095	$\Omega$
	$R_{DS(on)}$	$I_D = -6A$ , $V_{GS} = -4V$		0.095	0.13	$\Omega$

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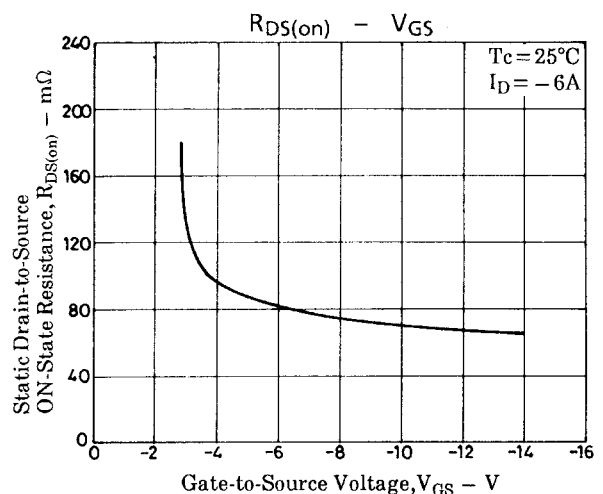
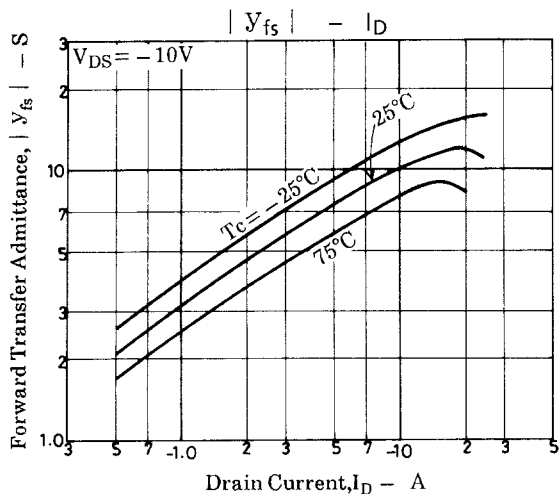
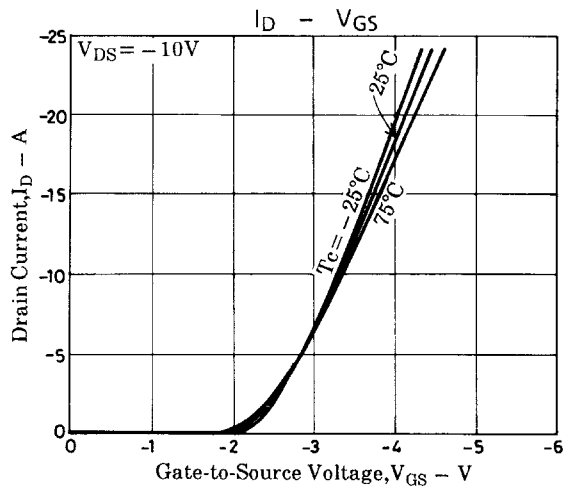
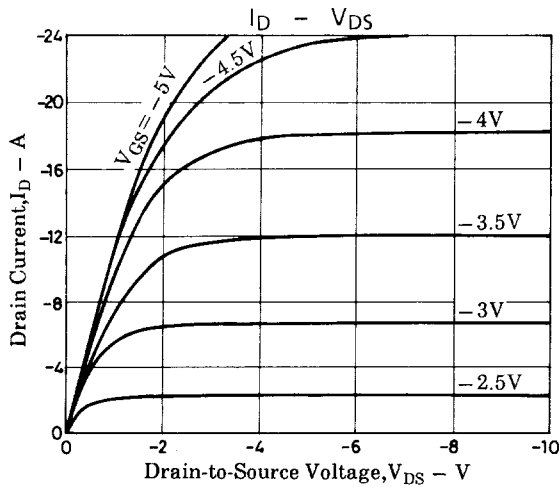
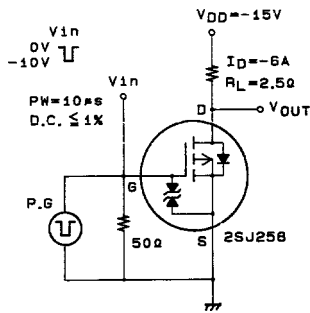
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# 2SJ258

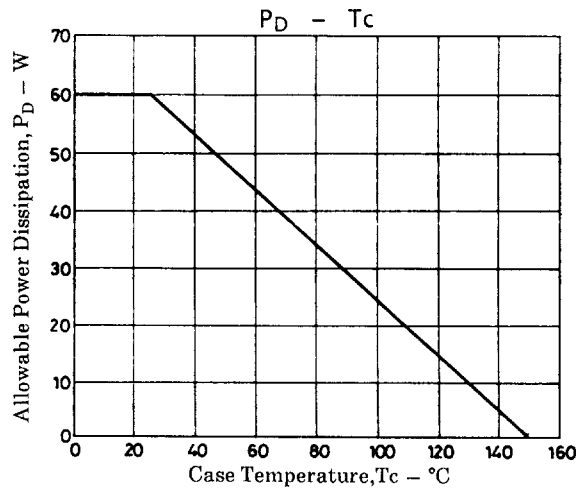
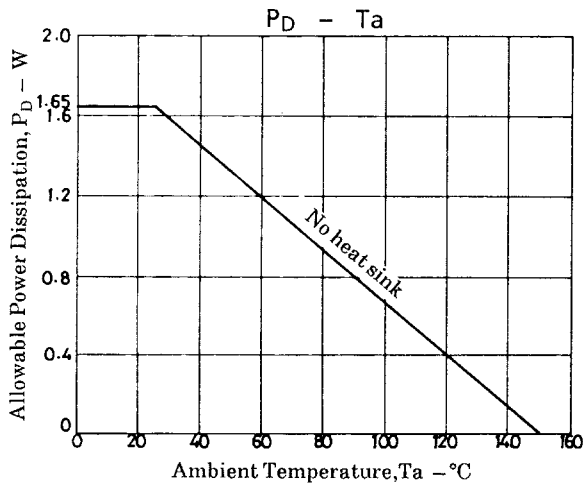
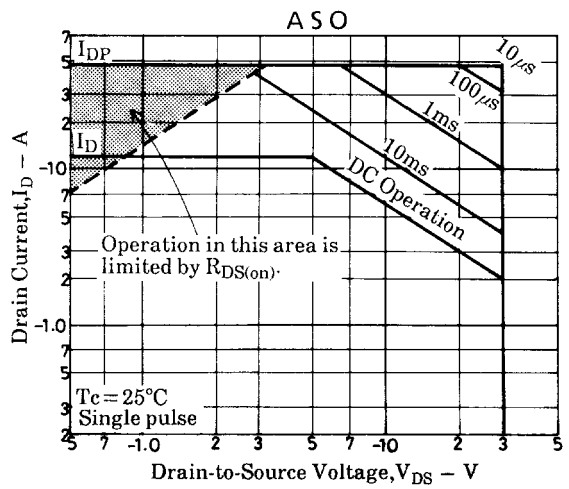
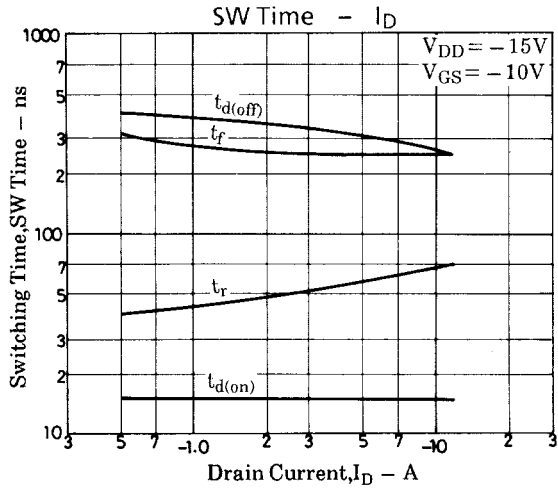
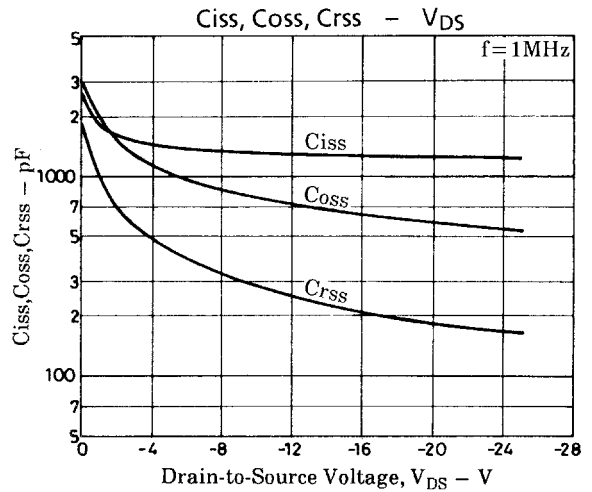
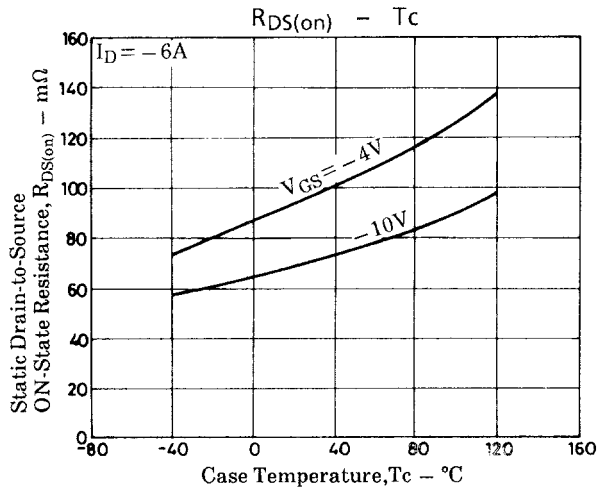
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	$C_{iss}$	$V_{DS} = -10V, f = 1MHz$		1300		pF
Output Capacitance	$C_{oss}$	$V_{DS} = -10V, f = 1MHz$		780		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS} = -10V, f = 1MHz$		290		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		16		ns
Rise Time	$t_r$	See specified Test Circuit		60		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		300		ns
Fall Time	$t_f$	See specified Test Circuit		250		ns
Diode Forward Voltage	$V_{SD}$	$I_S = -12A, V_{GS} = 0$		-1.0	-1.5	V

## Switching Time Test Circuit



# 2SJ258



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