

**2SK1887**

## Ultrahigh-Speed Switching Applications

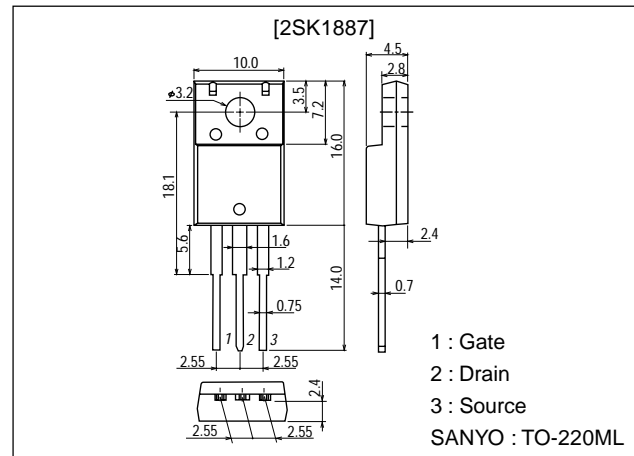
### Features

- Low ON resistance.
- Ultrahigh-speed switching.
- Low-voltage drive.
- Micaless package facilitating easy mounting.

### Package Dimensions

unit:mm

2063A



### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DS}$		30	V
Gate-to-Source Voltage	$V_{GS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		20	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	80	A
Allowable Power Dissipation	$P_D$		2.0	W
		$T_c = 25^\circ C$	25	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	$V_{(BR)DSS}$	$I_D = 1mA$ , $V_{GS} = 0$	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	$V_{GS(off)}$	$V_{DS} = 10V$ , $I_D = 1mA$	1.0		2.0	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 10V$ , $I_D = 11A$	9	14.5		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)}$	$I_D = 11A$ , $V_{GS} = 10V$		30	40	$m\Omega$
	$R_{DS(on)}$	$I_D = 11A$ , $V_{GS} = 4V$		40	55	$m\Omega$

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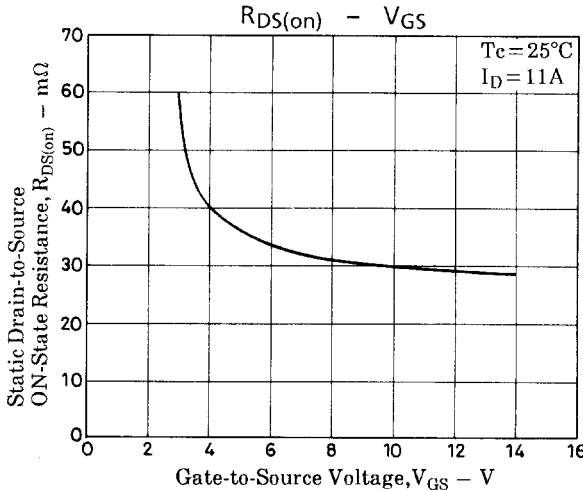
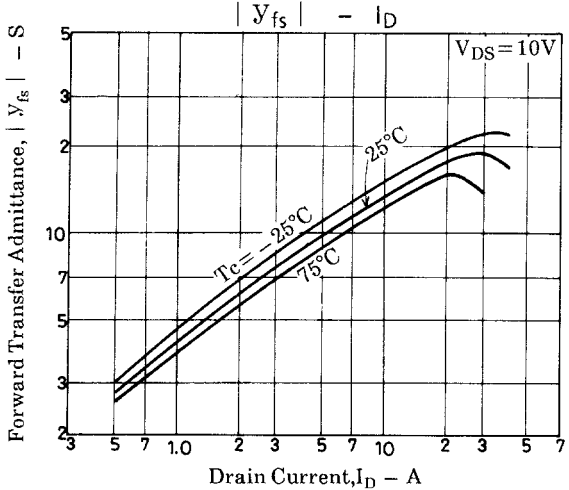
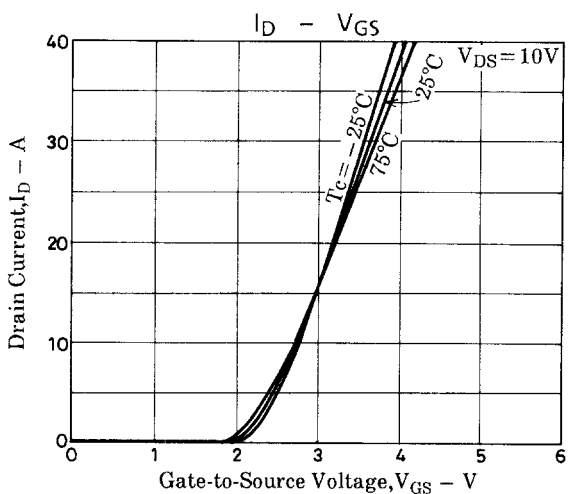
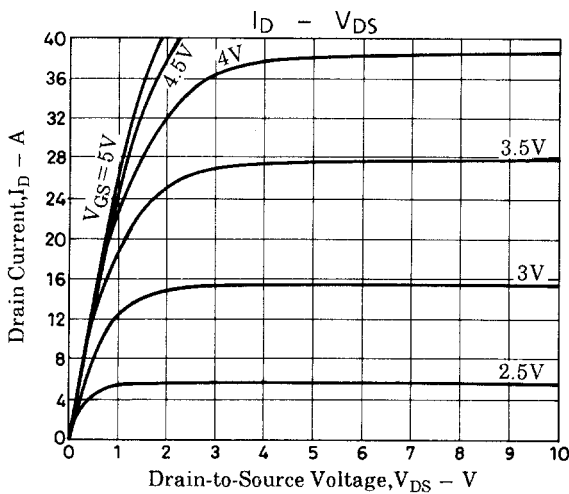
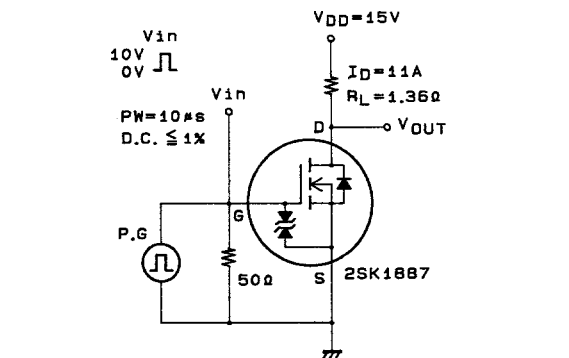
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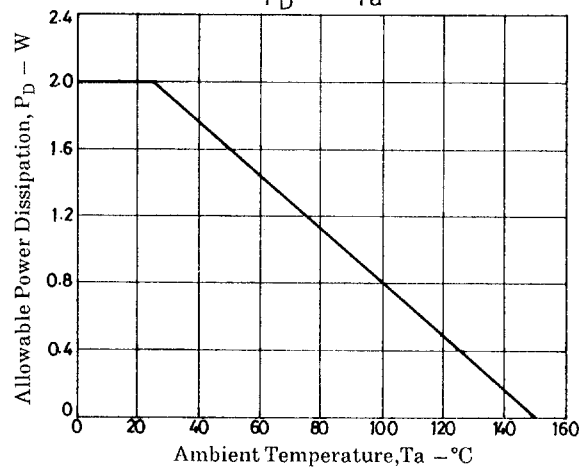
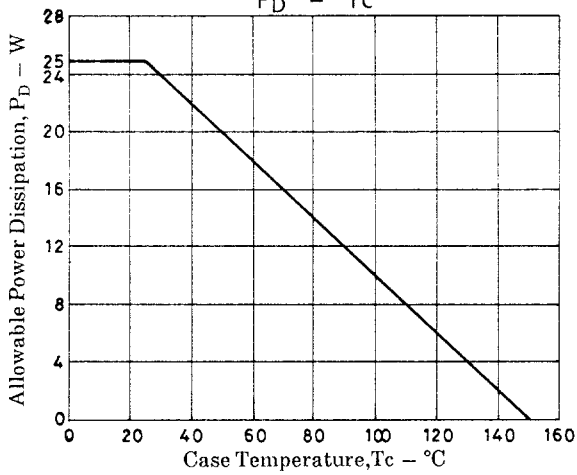
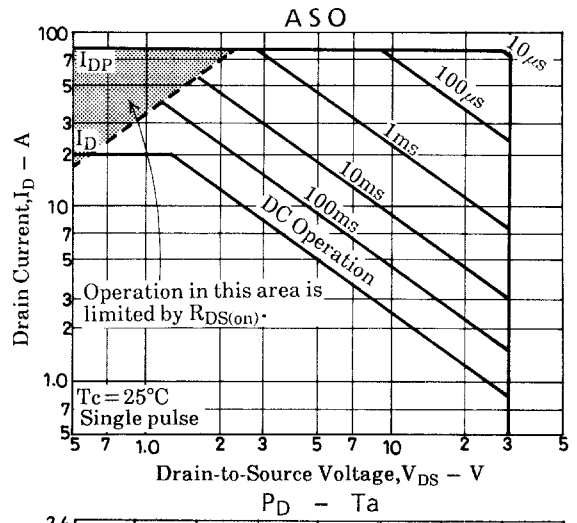
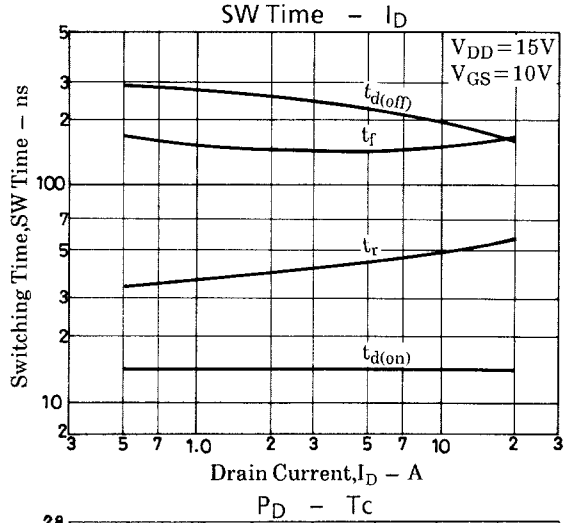
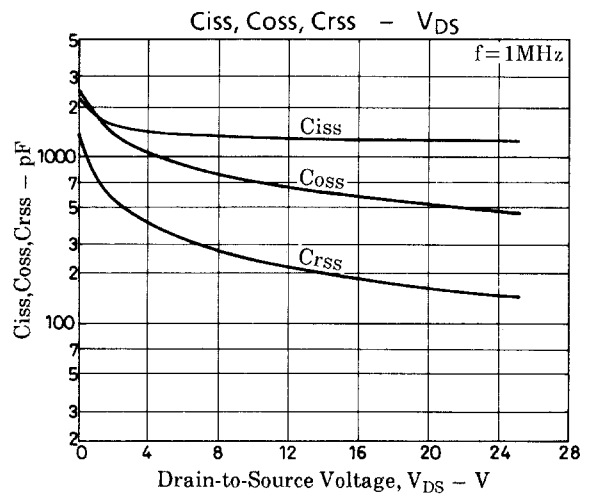
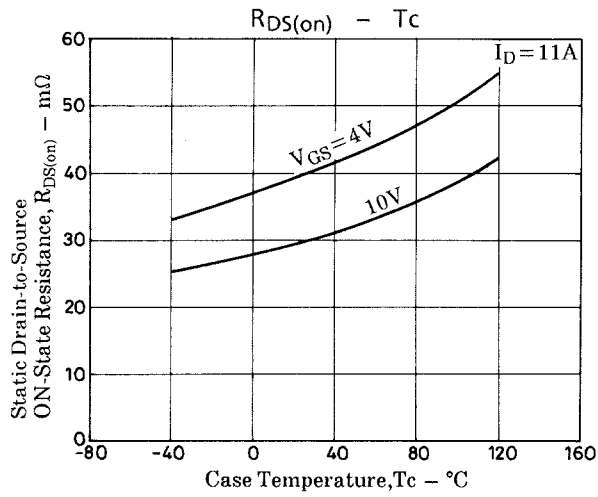
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=10V, f=1MHz$		1300		pF
Output Capacitance	Coss	$V_{DS}=10V, f=1MHz$		720		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=10V, f=1MHz$		240		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		14		ns
Rise Time	$t_r$	See specified Test Circuit		50		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		290		ns
Fall Time	$t_f$	See specified Test Circuit		150		ns
Diode Forward Voltage	$V_{SD}$	$I_S=20A, V_{GS}=0$		1.0	1.5	V

Switching Time Test Circuit





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