

**2SK2169**

## Ultrahigh-Speed Switching Applications

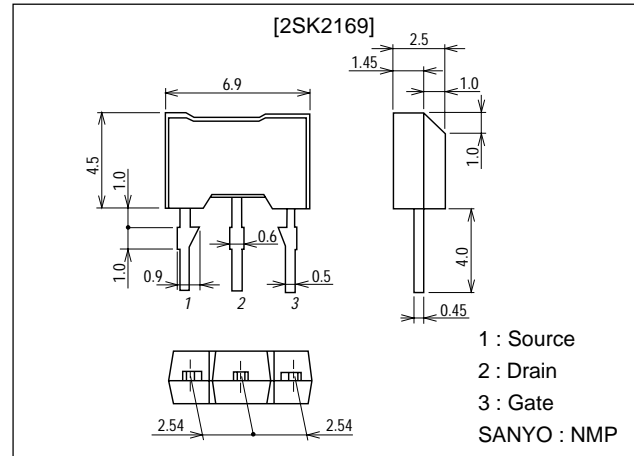
### Features

- Low ON resistance.
- Ultrahigh-speed switching.
- Low-voltage drive.

### Package Dimensions

unit:mm

2087A



### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		250	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		400	mA
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	1.6	A
Allowable Power Dissipation	$P_D$		1	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	$V_{(BR)DSS}$	$I_D=1mA$ , $V_{GS}=0$	250			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=250V$ , $V_{GS}=0$			100	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 18V$ , $V_{DS}=0$			$\pm 10$	$\mu A$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V$ , $I_D=1mA$	1.5		2.5	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V$ , $I_D=200mA$	0.4	0.6		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)}$	$I_D=200mA$ , $V_{GS}=10V$		3.5	5	$\Omega$

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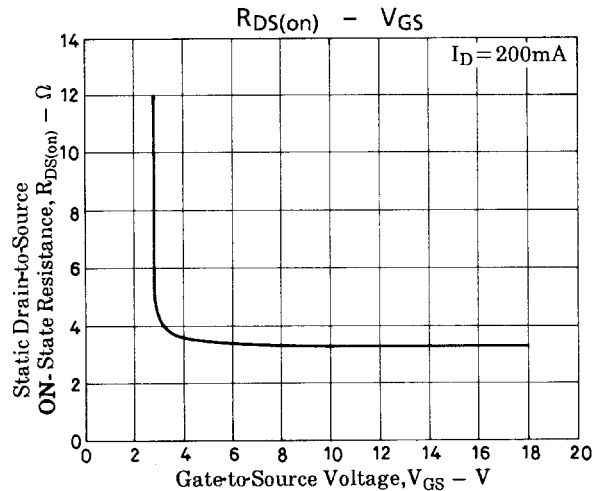
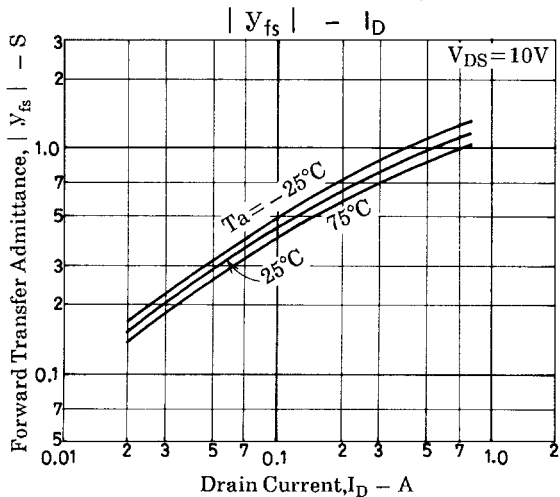
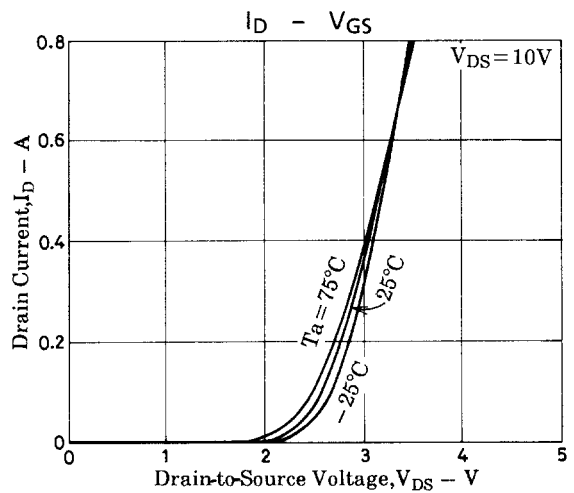
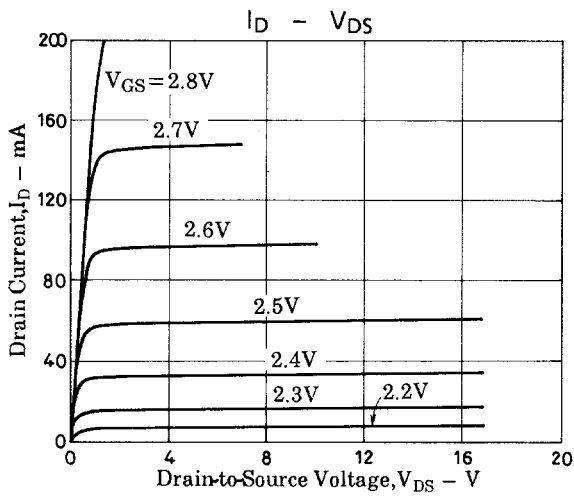
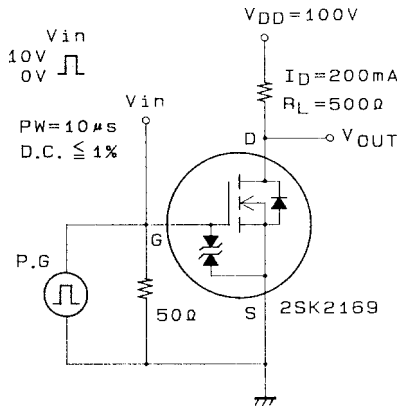
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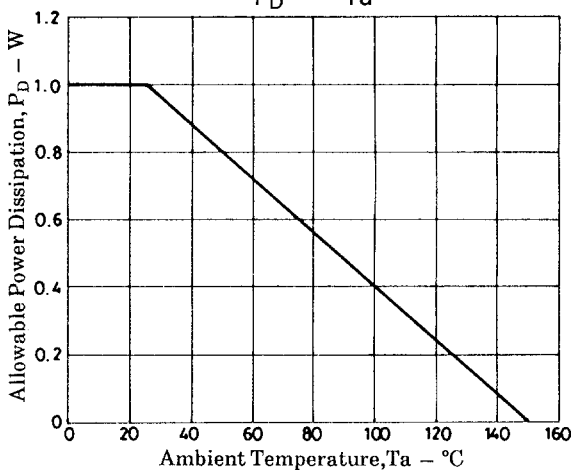
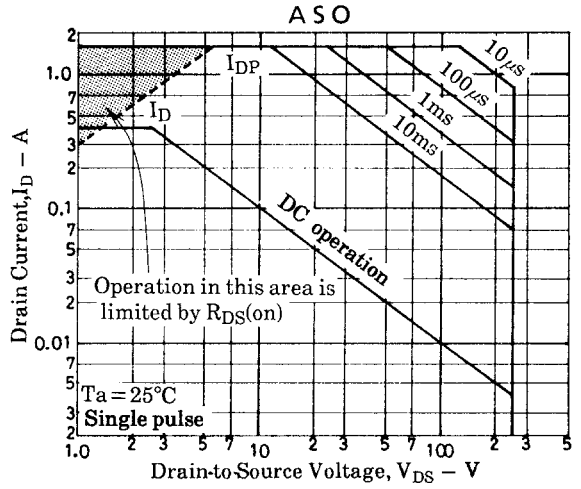
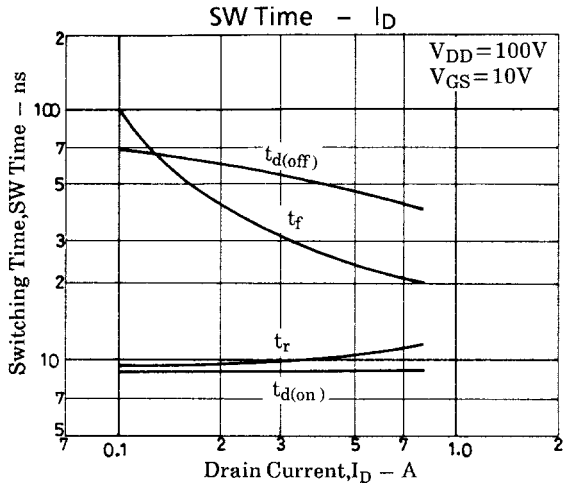
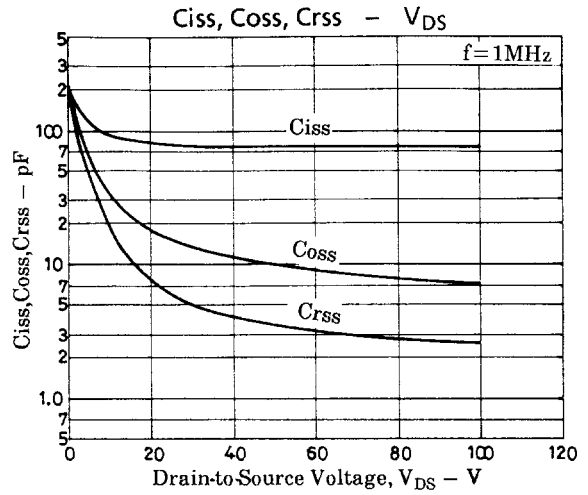
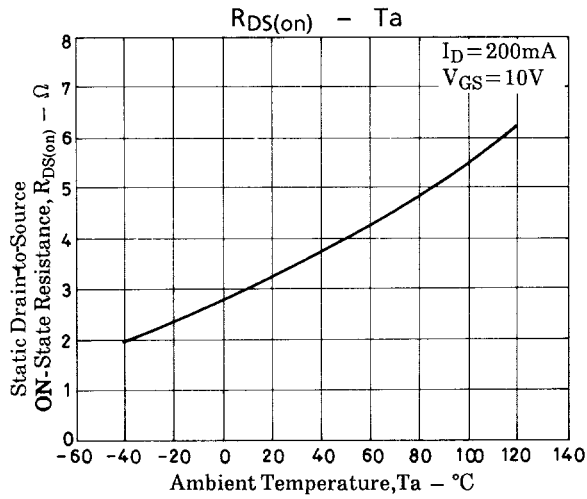
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	$C_{iss}$	$V_{DS}=20V, f=1MHz$		80		pF
Output Capacitance	$C_{oss}$	$V_{DS}=20V, f=1MHz$		20		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=20V, f=1MHz$		8		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		10		ns
Rise Time	$t_r$	See specified Test Circuit		10		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		65		ns
Fall Time	$t_f$	See specified Test Circuit		40		ns
Diode Forward Voltage	$V_{SD}$	$I_S=400mA, V_{GS}=0$		0.9		V

## Switching Time Test Circuit



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