

**2SK1738**

## Ultrahigh-Speed Switching Applications

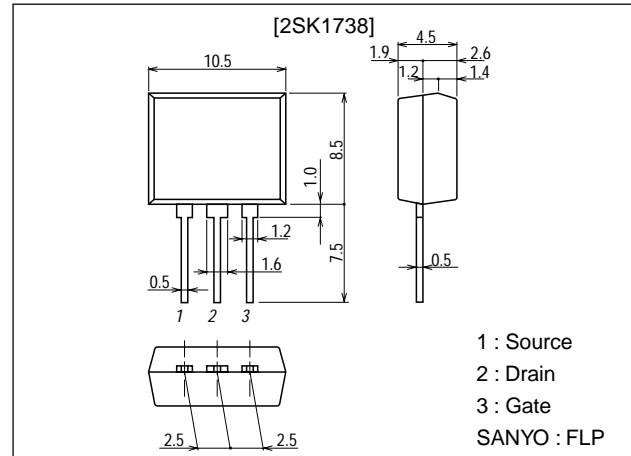
### Features

- Low ON resistance.
- Ultrahigh-speed switching.
- Low-voltage drive.
- Its height onboard is 9.5mm.
- Meets radial tapping.

### Package Dimensions

unit:mm

2085A



### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		100	V
Gate-to-Source Voltage	$V_{GSS}$		±15	V
Drain Current (DC)	$I_D$		3	A
Drain Current (pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	12	A
Allowable Power Dissipation	$P_D$		1.5	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	$V_{(BR)DSS}$	$I_D=1mA$ , $V_{GS}=0$	100			V
Gate-to-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G=\pm 100\mu A$ , $V_{DS}=0$	±15			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=100V$ , $V_{GS}=0$			100	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 12V$ , $V_{DS}=0$			±10	$\mu A$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V$ , $I_D=1mA$	1.0		2.0	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V$ , $I_D=1.5A$	3	5		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=1.5A$ , $V_{GS}=10V$		0.13	0.17	$\Omega$
	$R_{DS(on)2}$	$I_D=1.5A$ , $V_{GS}=4V$		0.17	0.22	$\Omega$

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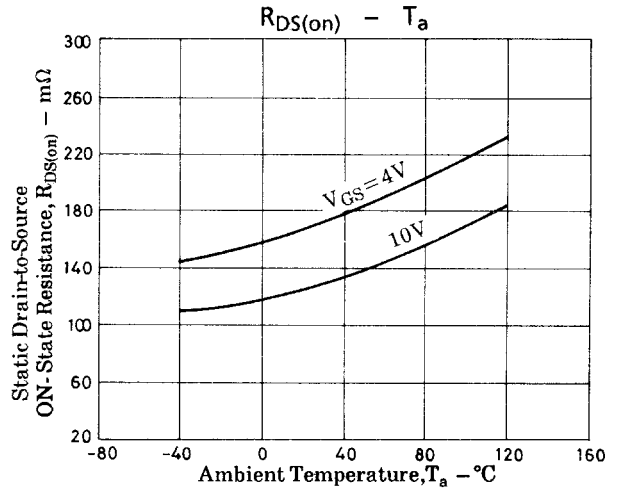
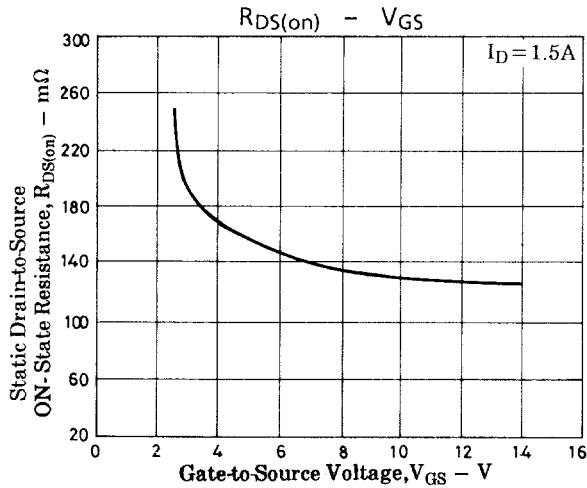
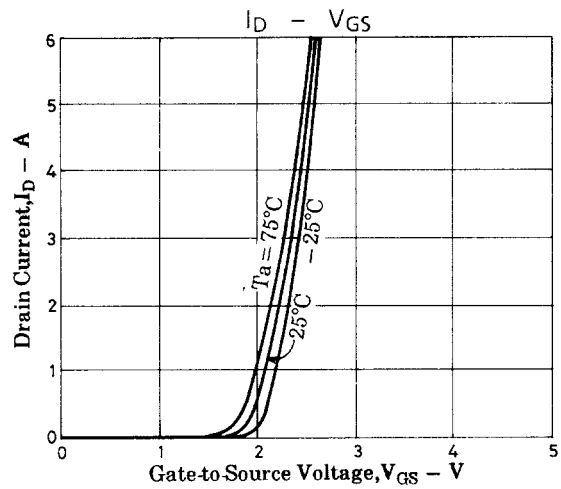
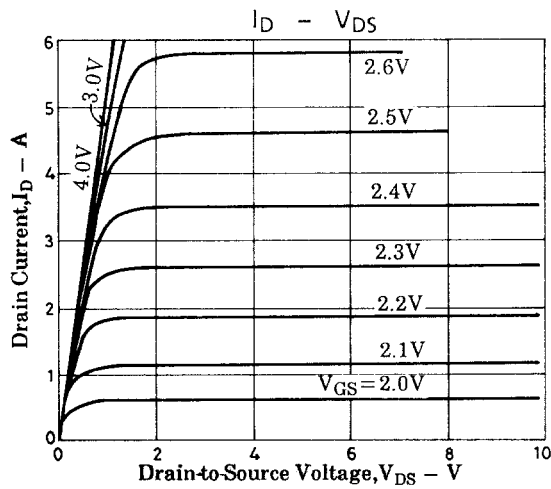
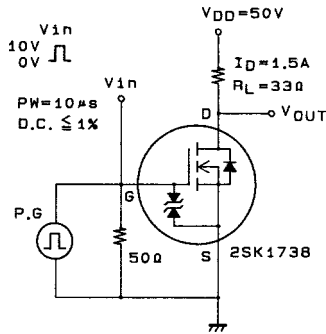
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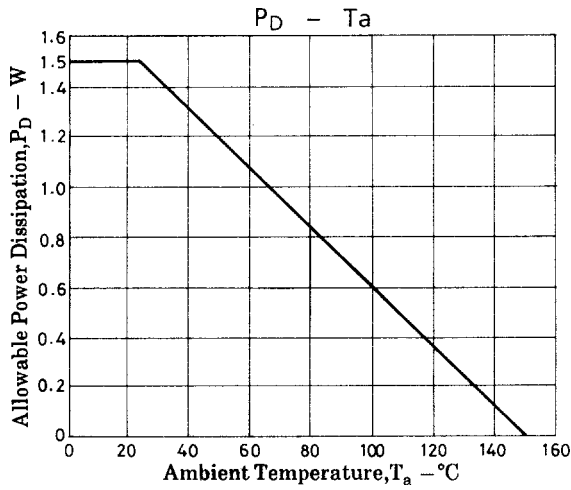
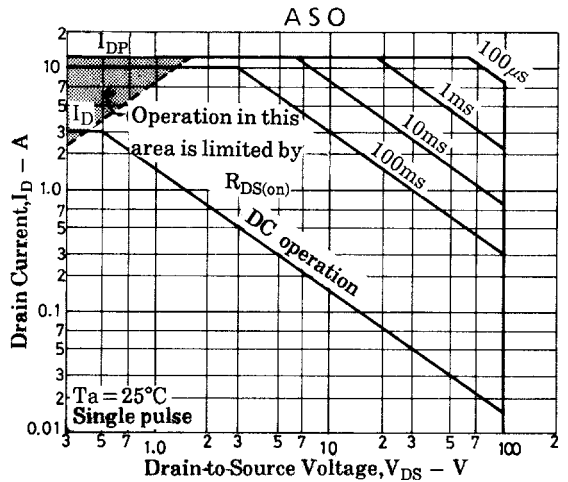
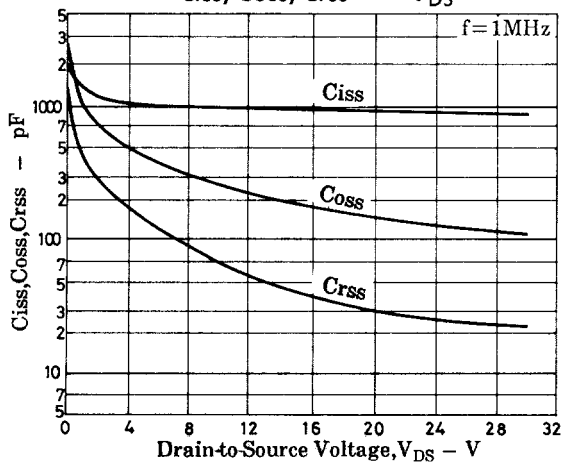
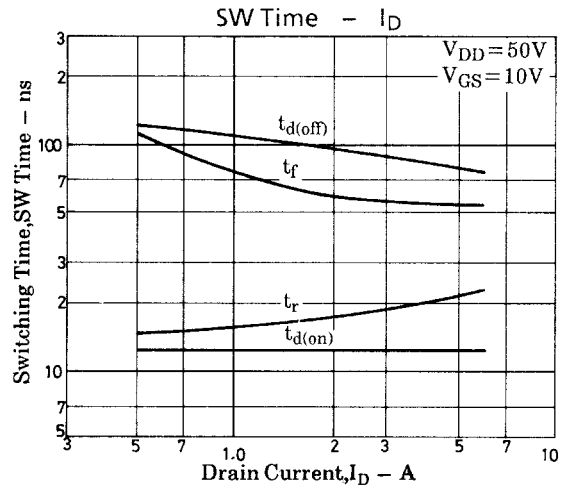
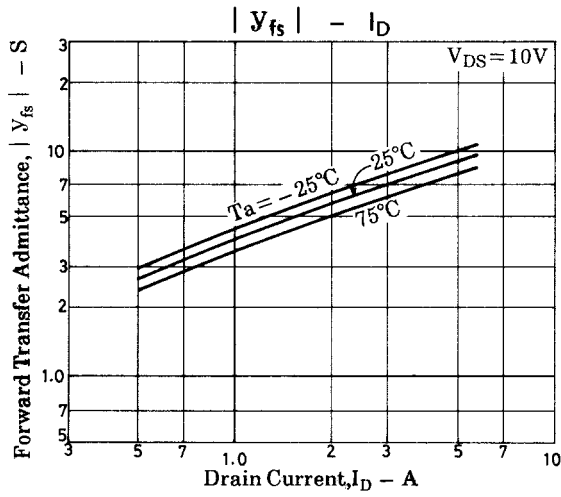
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Parameter	Symbol	Conditions	Ratings		Unit
Input Capacitance	$C_{iss}$	$V_{DS}=20V, f=1MHz$	950		pF
Output Capacitance	$C_{oss}$	$V_{DS}=20V, f=1MHz$	150		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=20V, f=1MHz$	30		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit	13		ns
Rise Time	$t_r$	See specified Test Circuit	18		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit	100		ns
Fall Time	$t_f$	See specified Test Circuit	65		ns
Diode Forward Voltage	$V_{SD}$	$I_S=3A, V_{GS}=0$	1.0	1.5	V

## Switching Time Test Circuit



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