

**2SK1729**

Ultrahigh-Speed Switching Applications

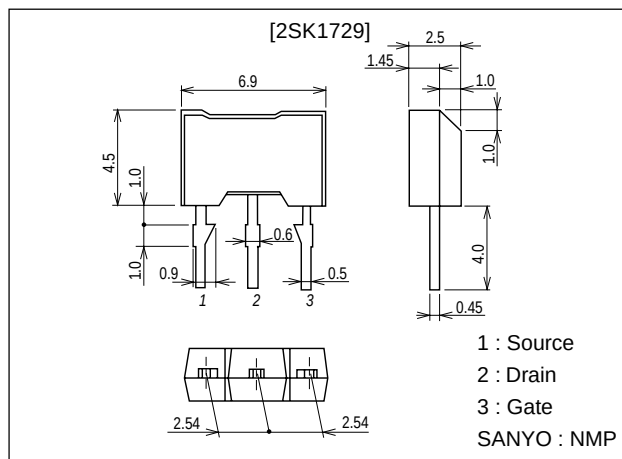
Features

- Low ON resistance.
- Ultrahigh-speed switching.
- Low-voltage drive.
- Meets radial taping.

Package Dimensions

unit:mm

2087A



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		100	V
Gate-to-Source Voltage	V_{GS}		±15	V
Drain Current (DC)	I_D		0.5	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	2	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	$V_{(BR)DSS}$	$I_D=1mA$, $V_{GS}=0$	100			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=100V$, $V_{GS}=0$			100	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 12V$, $V_{DS}=0$			±10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V$, $I_D=1mA$	1.0		2.0	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V$, $I_D=250mA$	400	700		mS
Static Drain-to-Source ON-State Resistance	$R_{DS(on)}$	$I_D=250mA$, $V_{GS}=10V$		2.7	3.5	Ω
	$R_{DS(on)}$	$I_D=250mA$, $V_{GS}=4V$		3.2	4.2	Ω

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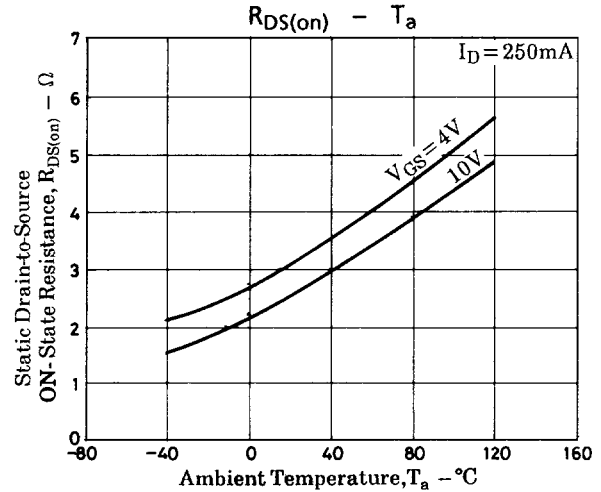
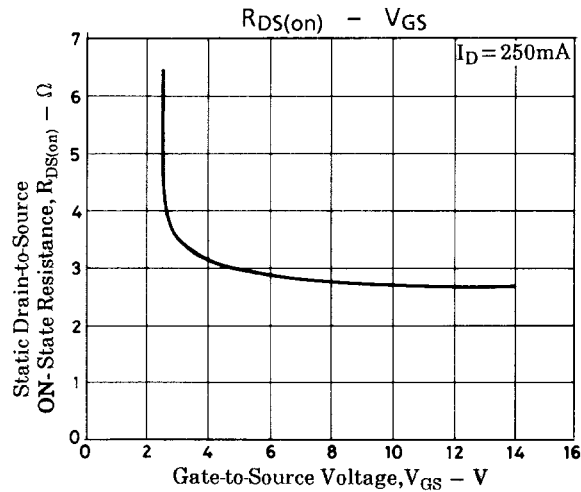
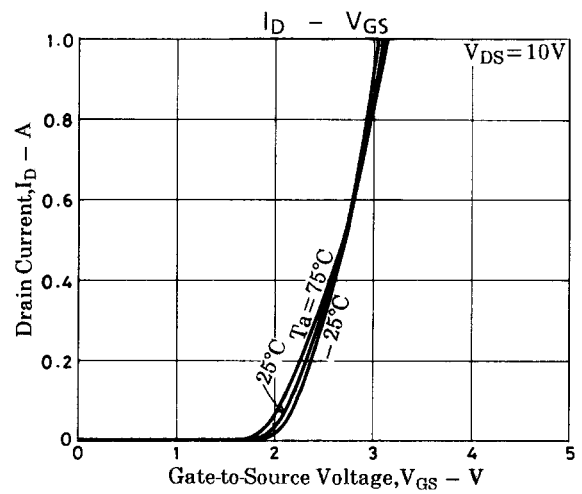
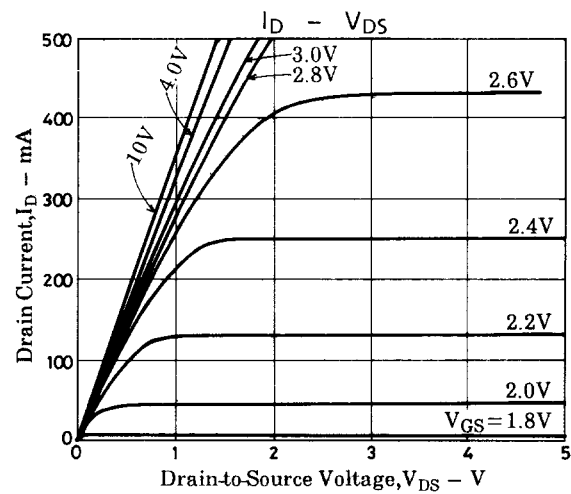
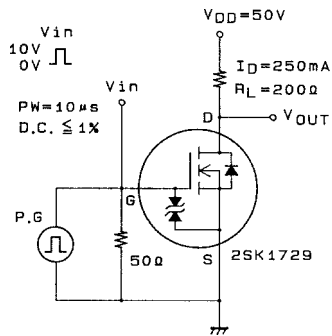
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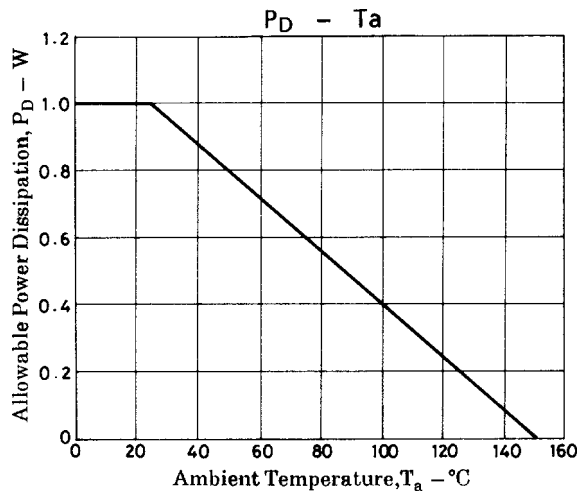
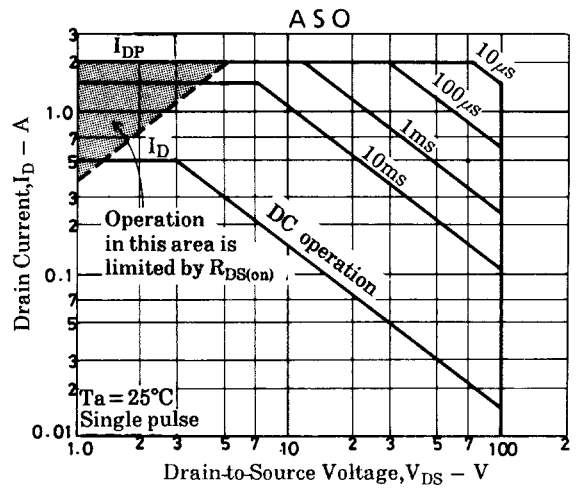
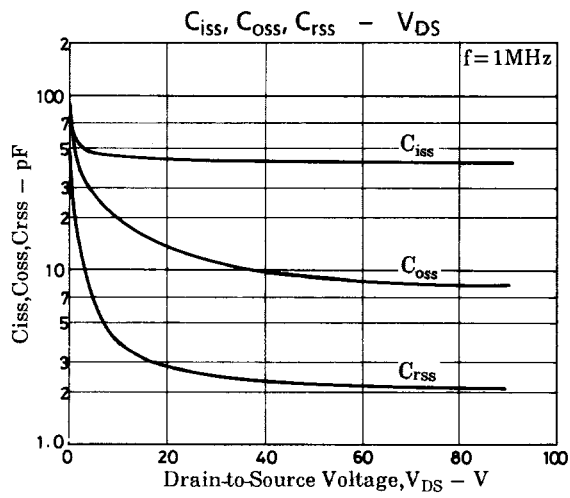
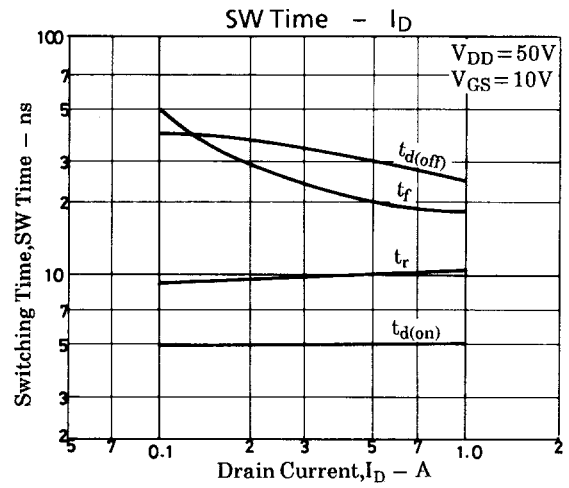
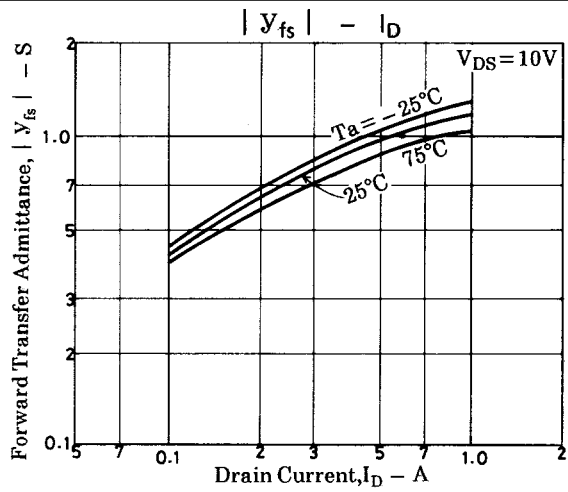
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Parameter	Symbol	Conditions	Ratings	Unit
Input Capacitance	C_{iss}	$V_{DS}=20V, f=1MHz$	45	pF
Output Capacitance	C_{oss}	$V_{DS}=20V, f=1MHz$	15	pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=20V, f=1MHz$	3	pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit	5	ns
Rise Time	t_r	See specified Test Circuit	10	ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit	35	ns
Fall Time	t_f	See specified Test Circuit	25	ns
Diode Forward Voltage	V_{SD}	$I_S=500mA, V_{GS}=0$	1.0	V

Switching Time Test Circuit





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