Ordering number:EN3831

N-Channel Silicon MOSFET

2SK1736

Ultrahigh-Speed Switching Applications

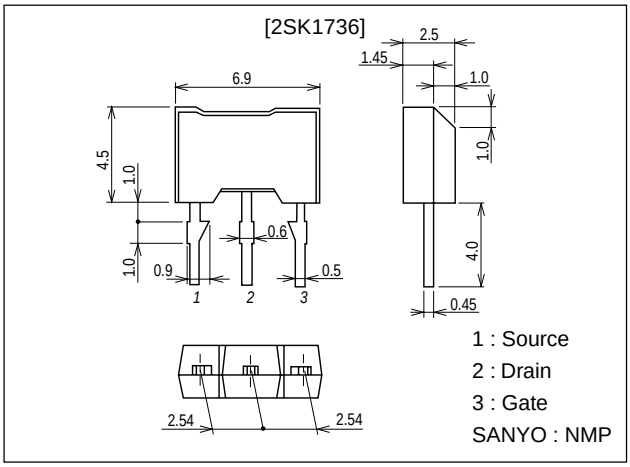
Features

- 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}		100	V
Gate-to-Source Voltage	V_{GSS}		±15	V
Drain Current (DC)	I_D		1	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	4	A
Allowable Power Dissipation	P_D		1	W
Channel Temperature	Tch		150	˚C
Storage Temperature	Tstg		–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}=±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	| yfs |	V_{DS}=10V, I_D=500mA	0.9	1.5		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)}$	I_D=500mA, V_{GS}=10V		0.7	0.95	Ω
	$R_{DS(on)}$	I_D=500mA, V_{GS}=4V		0.95	1.3	Ω

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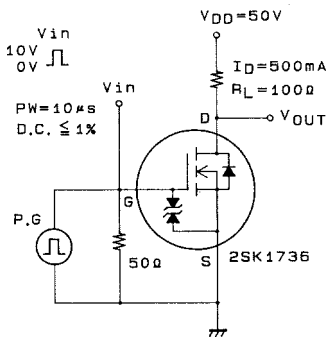
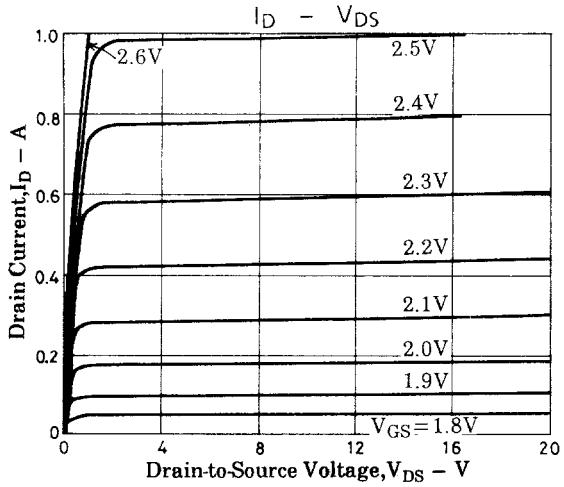
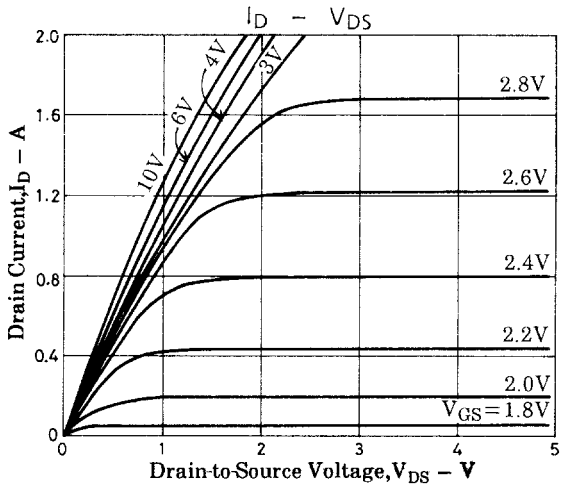
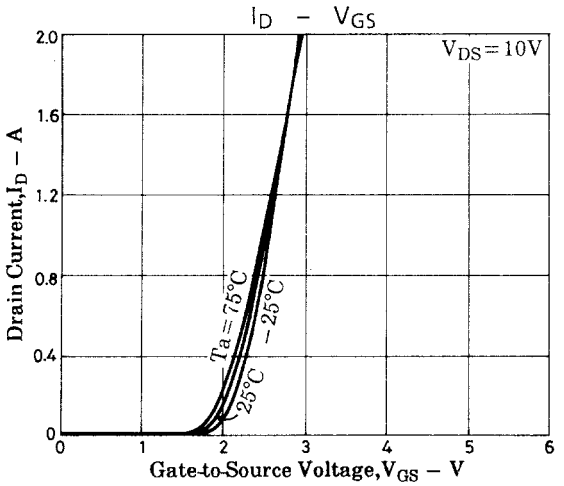
Parameter	Symbol	Conditions	Ratings			Unit
Input Capacitance	Ciss	V_{DS}=20V, f=1MHz		150		pF
Output Capacitance	Coss	V_{DS}=20V, f=1MHz		35		pF
Reverse Transfer Capacitance	Crss	V_{DS}=20V, f=1MHz		6		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		6		ns
Rise Time	t_r	See specified Test Circuit		10		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		65		ns
Fall Time	t_f	See specified Test Circuit		20		ns
Diode Forward Voltage	V_{SD}	I_S=1A, V_{GS}=0		0.9		V

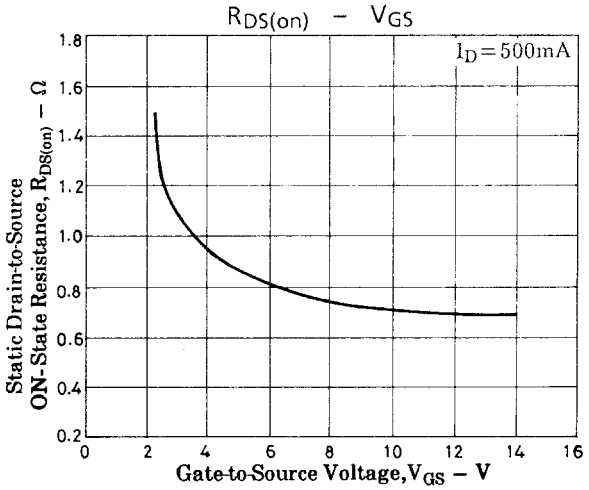
Switching Time Test Circuit



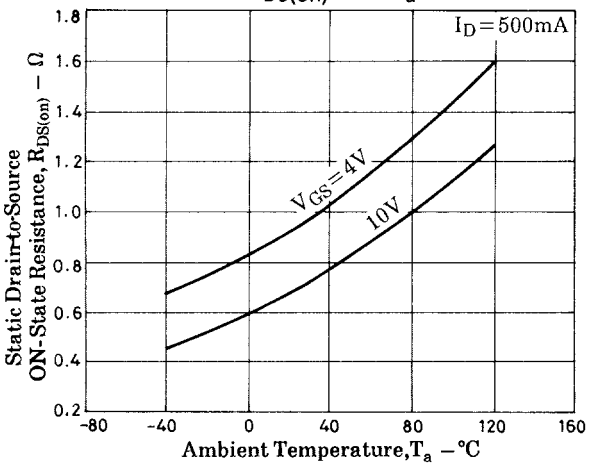




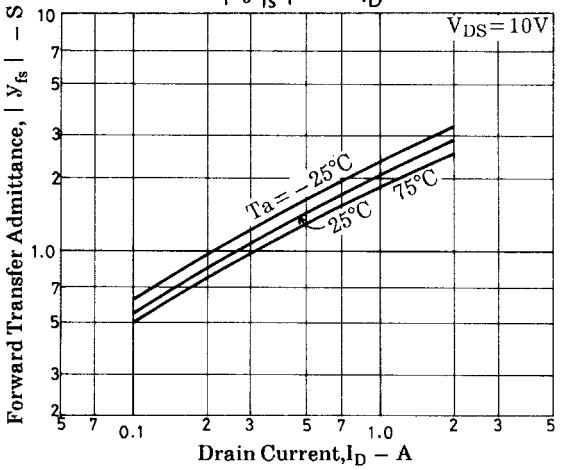




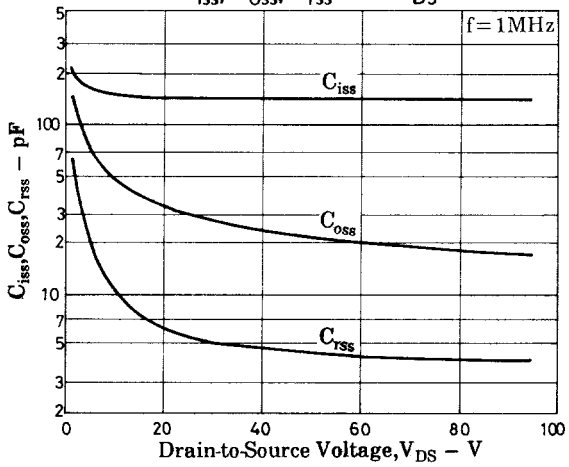
$R_{DS(on)}$ – T_a



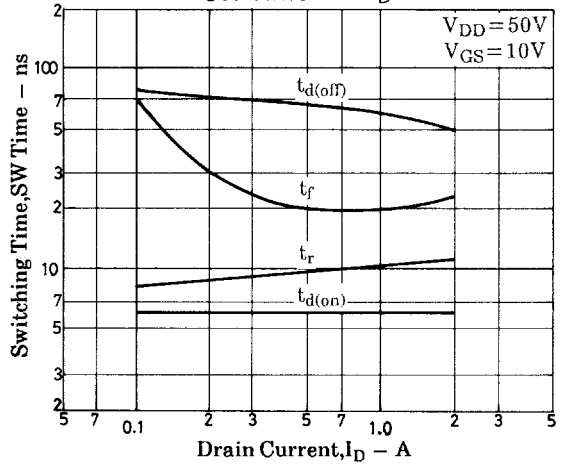
$|y_{fs}|$ – I_D



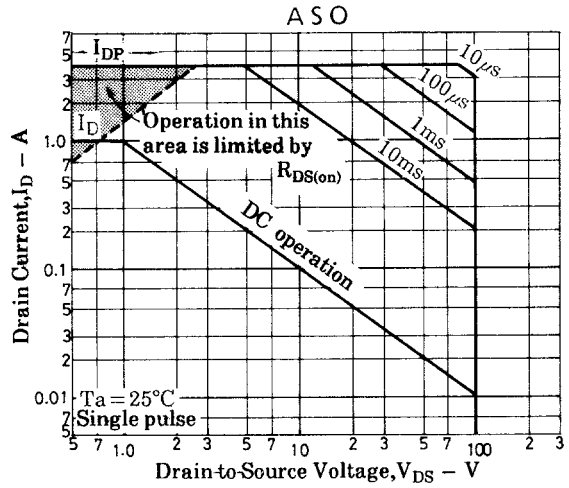
C_{iss}, C_{oss}, C_{rss} – V_{DS}



SW Time – I_D



ASO



P_D – Ta