



2SK1436

Ultrahigh-Speed Switching Applications

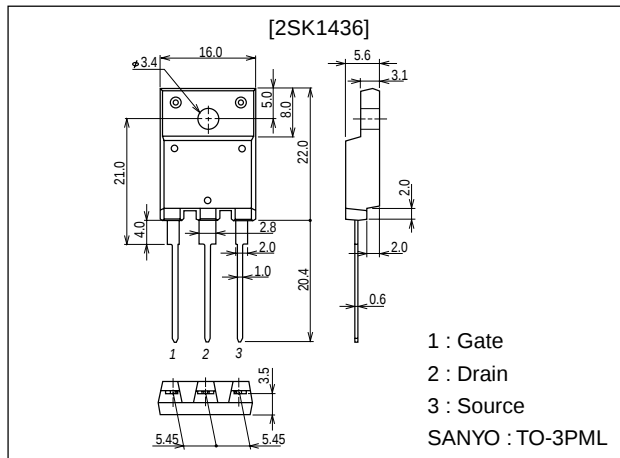
Features

- Low ON-state resistance.
- Ultrahigh-speed switching.
- Converters.
- Micaless package facilitating easy mounting.

Package Dimensions

unit:mm

2076B



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}		±20	V
Drain Current (DC)	I_D		50	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	200	A
Allowable Power Dissipation	P_D	Tc=25°C	80	W
			3.0	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Electrical Characteristics at $T_a = 25^\circ\text{C}$

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}	$V_{GS}=\pm 20V, V_{DS}=0$			± 100	nA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	1.5		2.5	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=40A$	27	45		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)}$	$I_D=40A, V_{GS}=10V$		0.023	0.035	Ω

(Note) Be careful in handling the 2SK1436 because it has no protection diode between gate and source.

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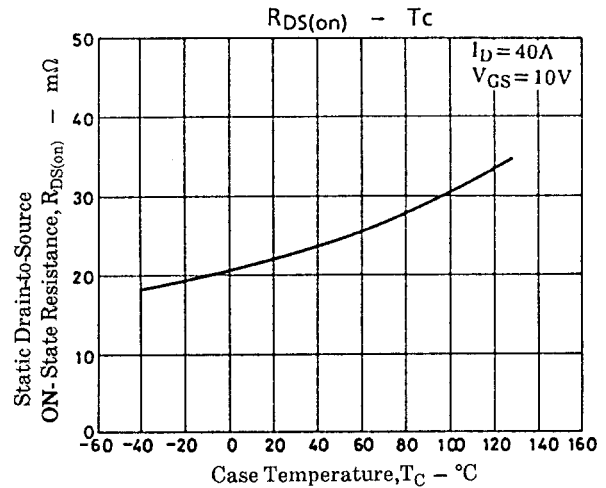
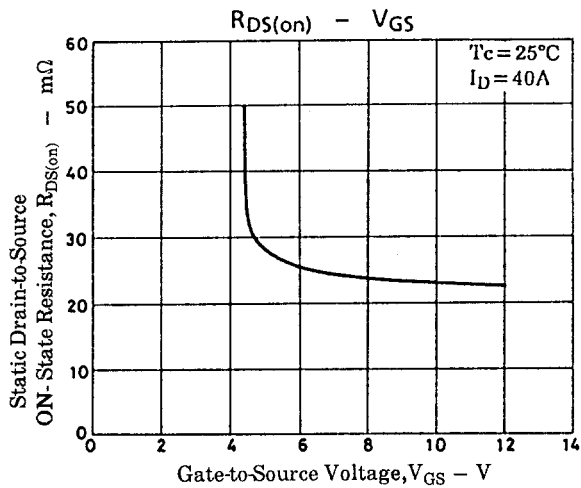
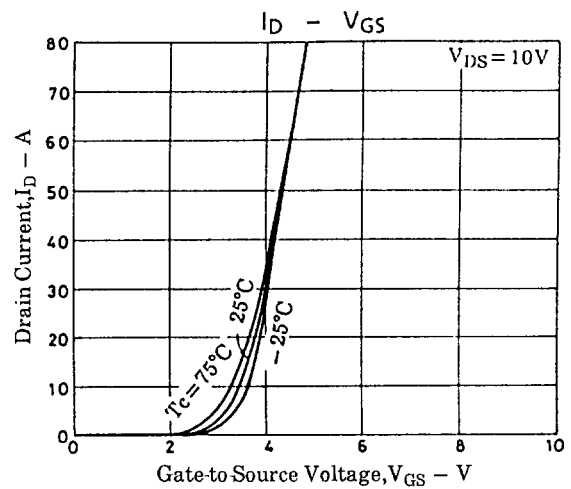
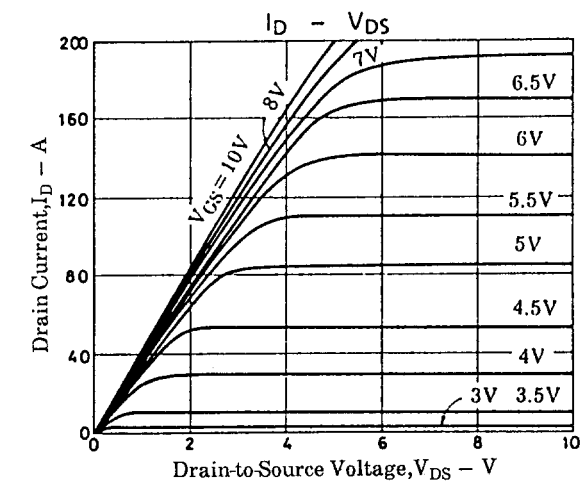
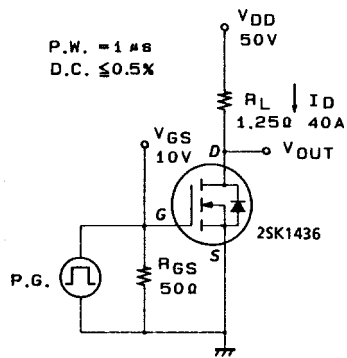
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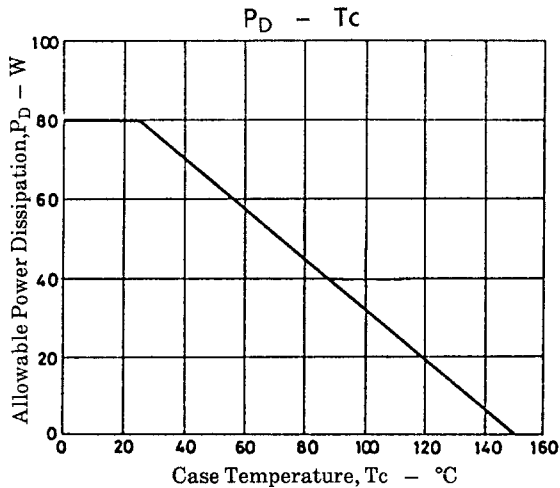
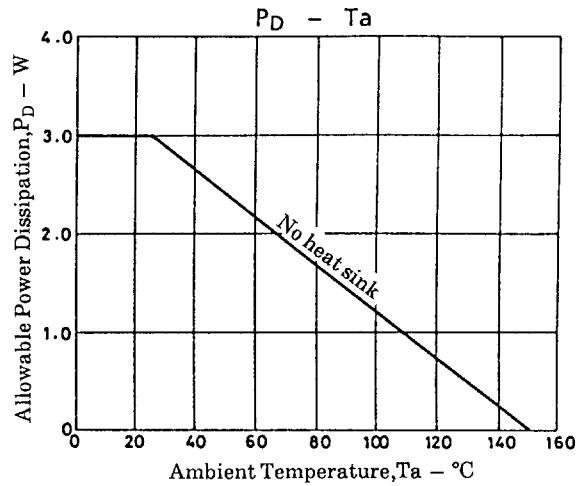
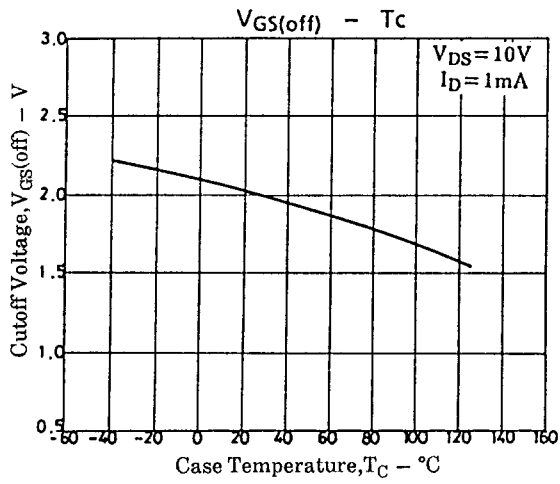
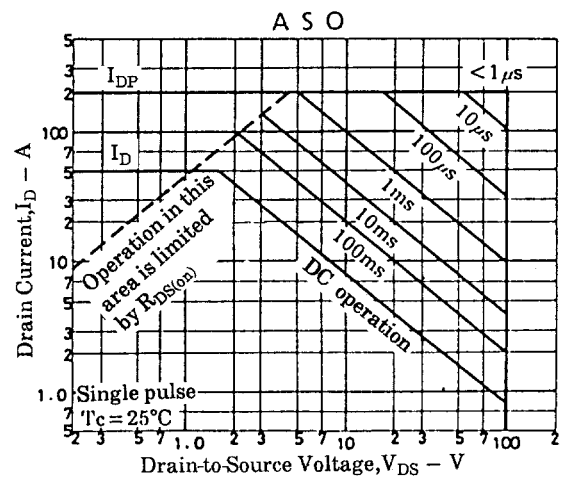
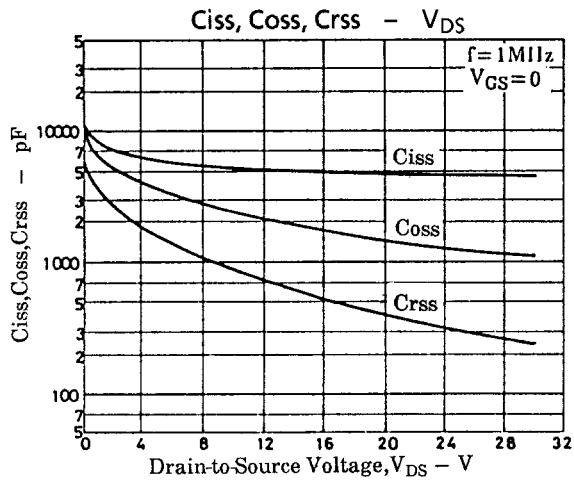
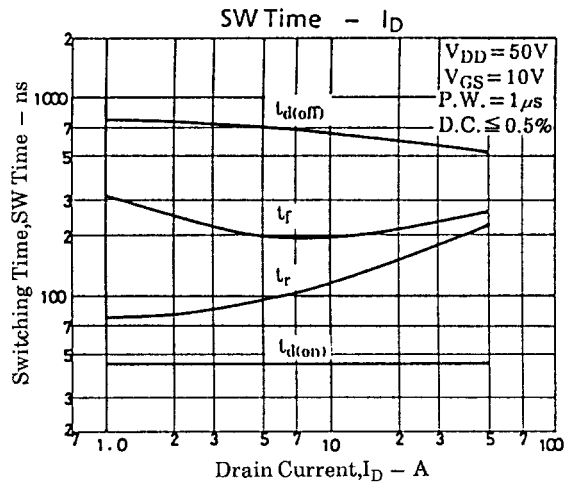
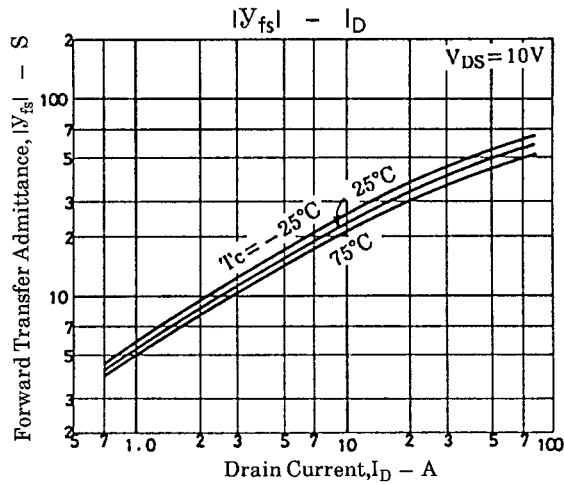
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	C_{iss}	$V_{DS}=20V, f=1MHz$		4800		pF
Output Capacitance	C_{oss}	$V_{DS}=20V, f=1MHz$		1400		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=20V, f=1MHz$		400		pF
Turn-ON Delay Time	$t_{d(on)}$	$I_D=40A, V_{GS}=10V, V_{DD}=50V, R_{GS}=50\Omega$		45		ns
Rise Time	t_r	$I_D=40A, V_{GS}=10V, V_{DD}=50V, R_{GS}=50\Omega$		195		ns
Turn-OFF Delay Time	$t_{d(off)}$	$I_D=40A, V_{GS}=10V, V_{DD}=50V, R_{GS}=50\Omega$		560		ns
Fall Time	t_f	$I_D=40A, V_{GS}=10V, V_{DD}=50V, R_{GS}=50\Omega$		240		ns
Diode Forward Voltage	V_{SD}	$I_S=50A, V_{GS}=0$			1.8	V

Switching Time Test Circuit





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