

**2SK1417**

Ultrahigh-Speed Switching Applications

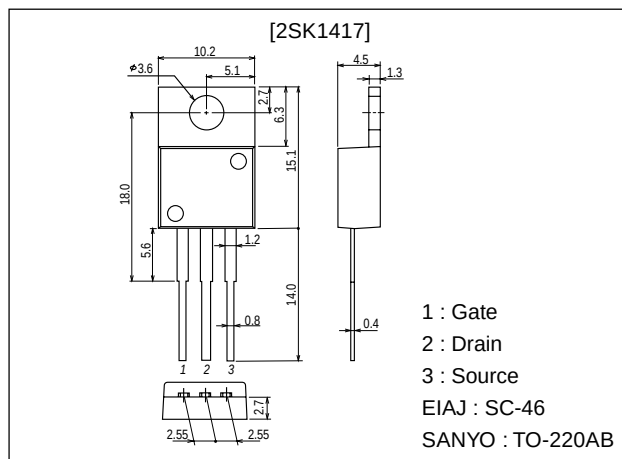
Features

- Low ON-state resistance.
- Ultrahigh-speed switching.
- Converters.

Package Dimensions

unit:mm

2052C



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		60	V
Gate-to-Source Voltage	V_{GSS}		±20	V
Drain Current (DC)	I_D		25	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	100	A
Allowable Power Dissipation	P_D	Tc=25°C	60	W
			1.75	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	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0$	60			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0$			100	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=±20V, V_{DS}=0$			±100	nA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	1.5		2.5	V
Forward Transfer Admittance	yfs	$V_{DS}=10V, I_D=15A$	10	15		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)}$	$I_D=15A, V_{GS}=10V$		0.035	0.045	Ω

(Note) Be careful in handling the 2SK1417 because it has no protection diode between gate and source.

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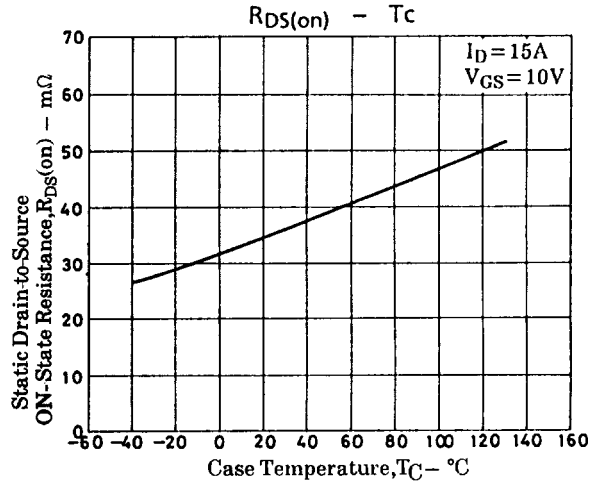
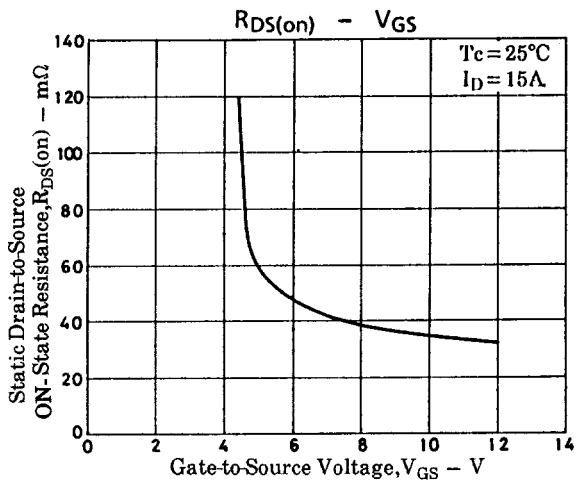
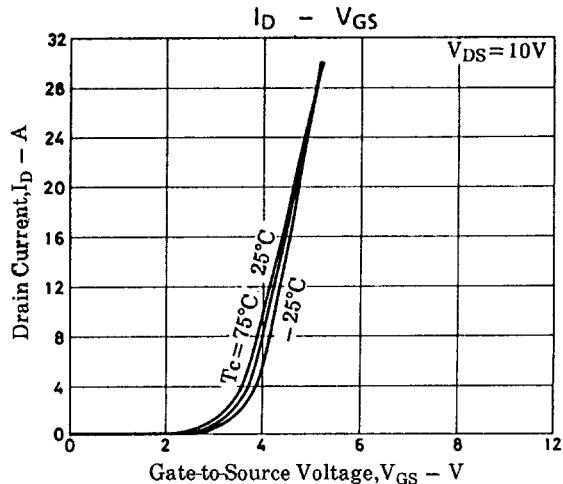
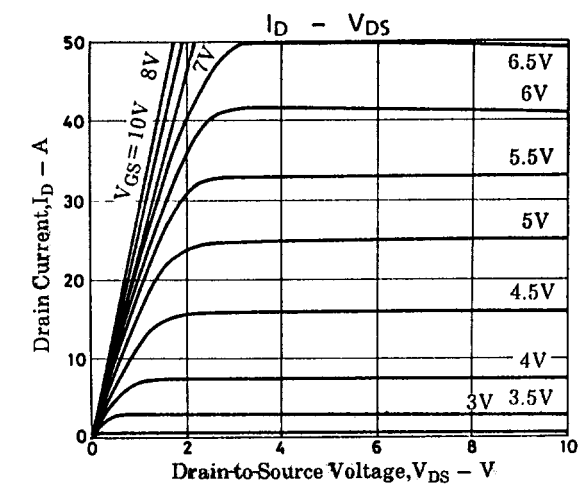
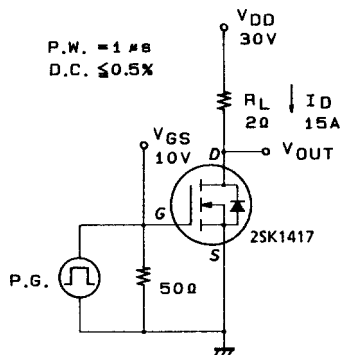
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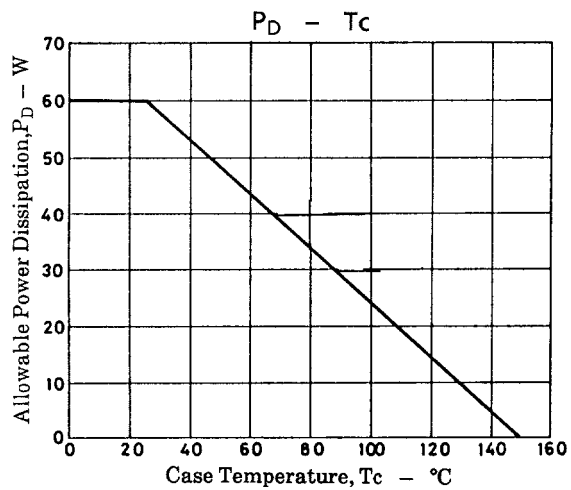
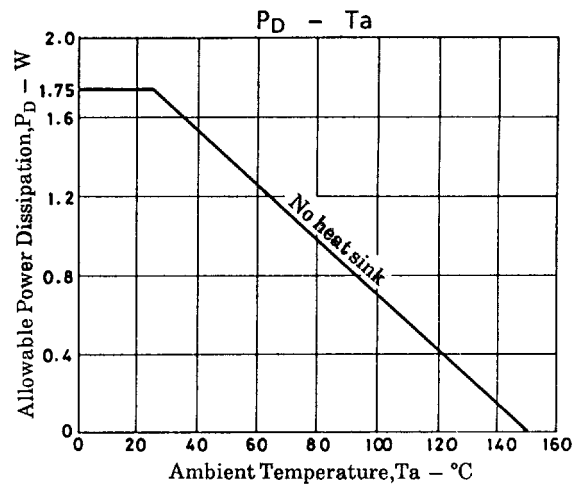
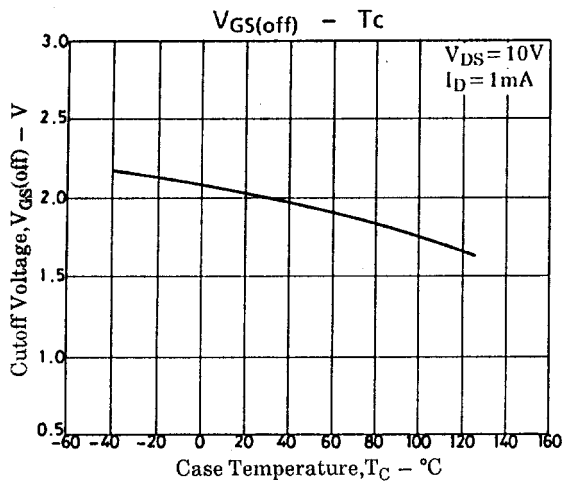
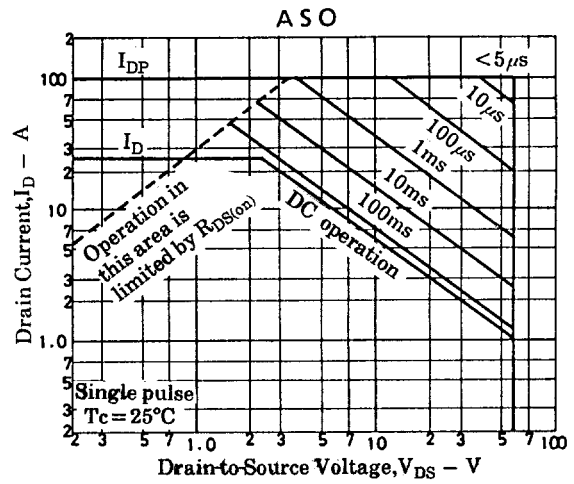
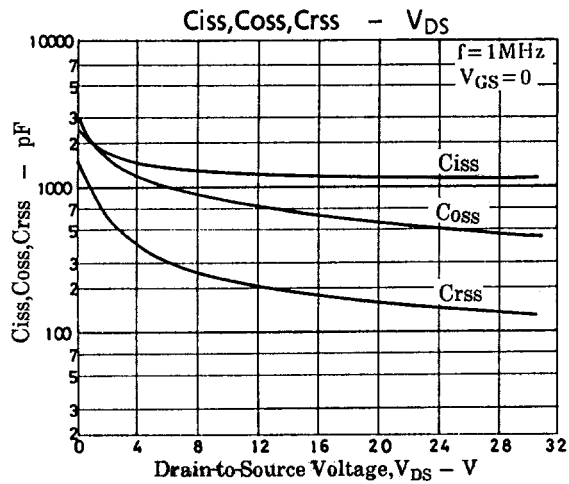
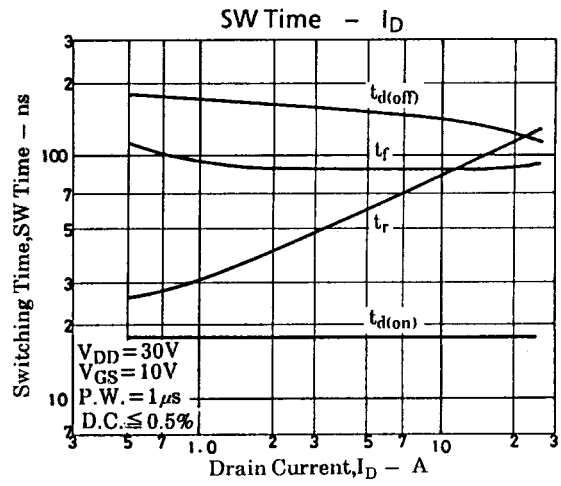
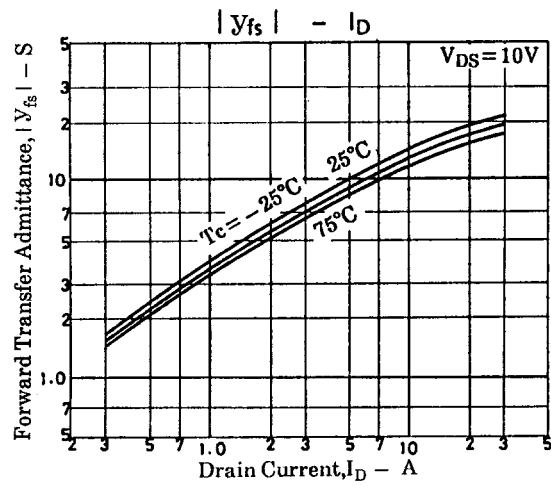
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V _{DS} =20V, f=1MHz		1200		pF
Output Capacitance	Coss	V _{DS} =20V, f=1MHz		550		pF
Reverse Transfer Capacitance	Crss	V _{DS} =20V, f=1MHz		150		pF
Turn-ON Delay Time	t _{d(on)}	I _D =15A, V _{GS} =10V, V _{DD} =30V, R _{GS} =50Ω		18		ns
Rise Time	t _r	I _D =15A, V _{GS} =10V, V _{DD} =30V, R _{GS} =50Ω		102		ns
Turn-OFF Delay Time	t _{d(off)}	I _D =15A, V _{GS} =10V, V _{DD} =30V, R _{GS} =50Ω		130		ns
Fall Time	t _f	I _D =15A, V _{GS} =10V, V _{DD} =30V, R _{GS} =50Ω		90		ns
Diode Forward Voltage	V _{SD}	I _S =25A, V _{GS} =0			1.8	V

Switching Time Test Circuit





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