



Ultrahigh-Speed Switching Applications

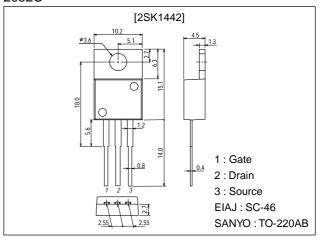
Features

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

Package Dimensions

unit:mm

2052C



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		450	V
Gate-to-Source Voltage	VGSS		±30	V
Drain Current (DC)	ID		12	Α
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	48	Α
Allowable Power Dissipation	PD	Tc=25°C	70	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	O'III
Drain-to-Source Breakdown Voltage	V(BR)DSS	I _D =1mA, V _{GS} =0	450			V
Zero-Gate Voltage Drain Current	IDSS	V _{DS} =450V, V _{GS} =0			1.0	mA
Gate-to-Source Leakage Current	IGSS	V _{GS} =±30V, V _{DS} =0			±100	nA
Cutoff Voltage	VGS(off)	V _{DS} =10V, I _D =1mA	2.0		3.0	V
Forward Transfer Admittance	yfs	V _{DS} =10V, I _D =6A	4.0	8.0		S
Static Drain-to-Source ON-State Resistance	R _{DS(on)}	I _D =6A, V _{GS} =10V		0.47	0.6	Ω

(Note) Be careful in handling the 2SK1442 because it has no protection diode between gate and source.

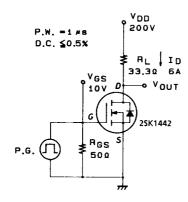
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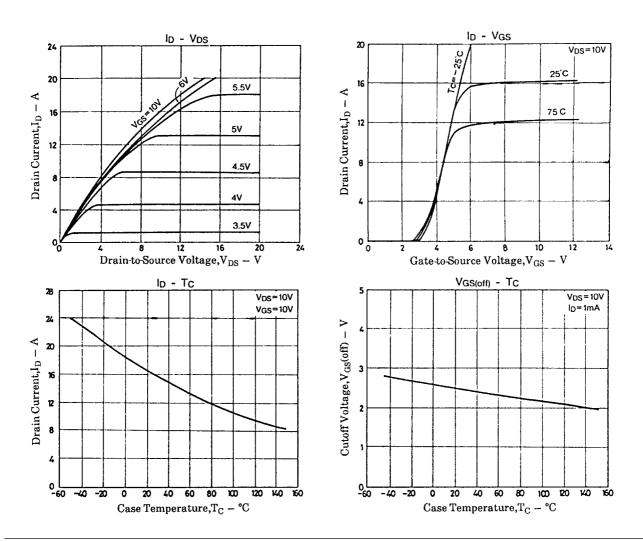
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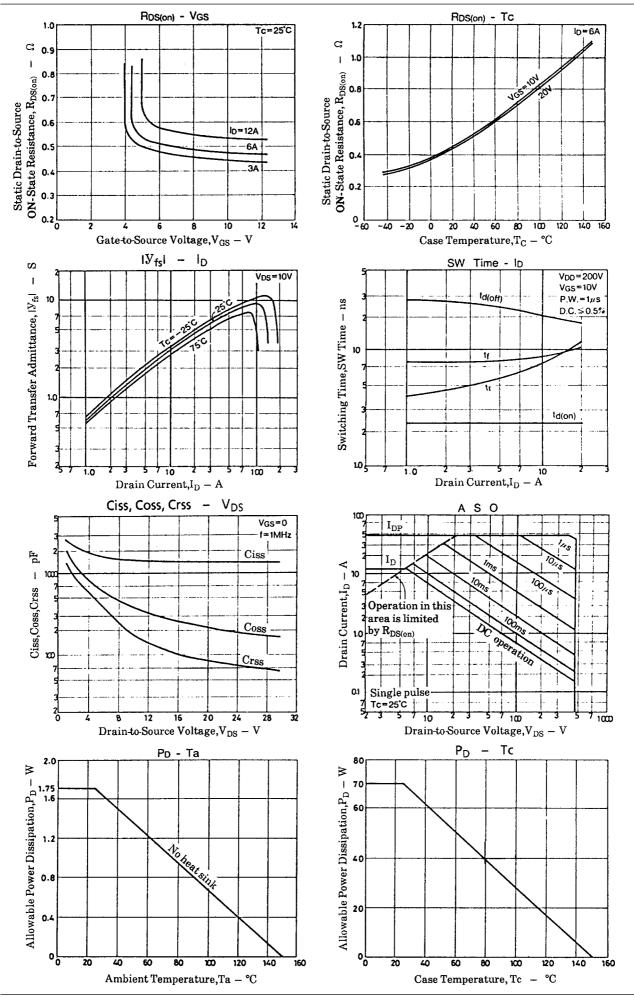
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Parameter	Symbol	Conditions	Ratings			Unit
	Symbol		min	typ	max	Office
Input Capacitance	Ciss	V _{DS} =20V, f=1MHz		1600		pF
Output Capacitance	Coss	V _{DS} =20V, f=1MHz		220		pF
Reverse Transfer Capacitance	Crss	V _{DS} =20V, f=1MHz		80		pF
Turn-ON Delay Time	td(on)	I_{D} =6A, V_{GS} =10V, V_{DD} =200V, R_{GS} =50 Ω		25		ns
Rise Time	t _r	I_{D} =6A, V_{GS} =10V, V_{DD} =200V, R_{GS} =50 Ω		60		ns
Turn-OFF Delay Time	td(off)	I_{D} =6A, V_{GS} =10V, V_{DD} =200V, R_{GS} =50 Ω		250		ns
Fall Time	t _f	I_{D} =6A, V_{GS} =10V, V_{DD} =200V, R_{GS} =50 Ω		80		ns
Diode Forward Voltage	V _{SD}	I _S =12A, V _{GS} =0			1.8	V

Switching Time Test Circuit







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