

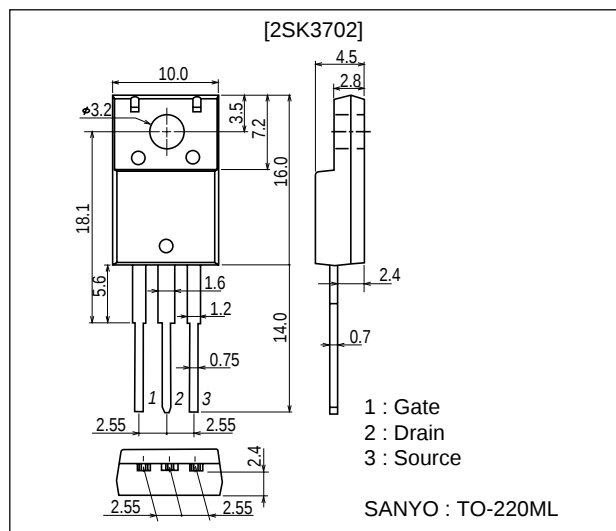
**2SK3702****DC / DC Converter Applications****Features**

- Low ON-resistance.
- Ultrahigh-speed switching.
- 4V drive.

Package Dimensions

unit : mm

2063A

**Specifications****Absolute Maximum Ratings** at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		60	V
Gate-to-Source Voltage	V_{GS}		± 20	V
Drain Current (DC)	I_D		18	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	72	A
Allowable Power Dissipation	P_D		2.0	W
		$T_c = 25^\circ C$	20	W
Channel Temperature	T_{ch}		150	$^\circ C$
Storage Temperature	T_{stg}		-55 to +150	$^\circ C$

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}	$V_{DS} = 60V$, $V_{GS} = 0$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 16V$, $V_{DS} = 0$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10V$, $I_D = 1mA$	1.2		2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 10V$, $I_D = 9A$	8	12		S

Marking : K3702

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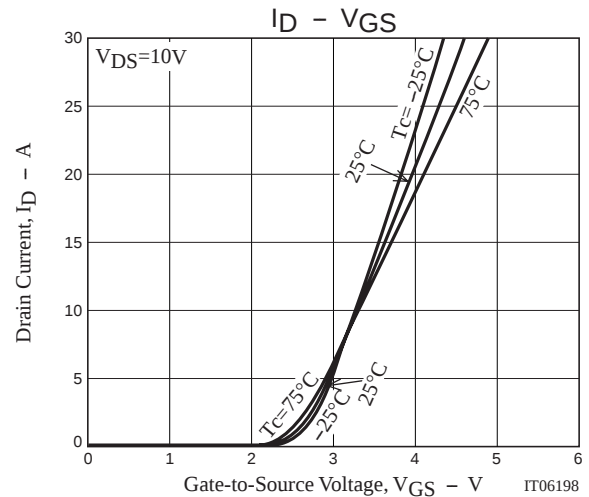
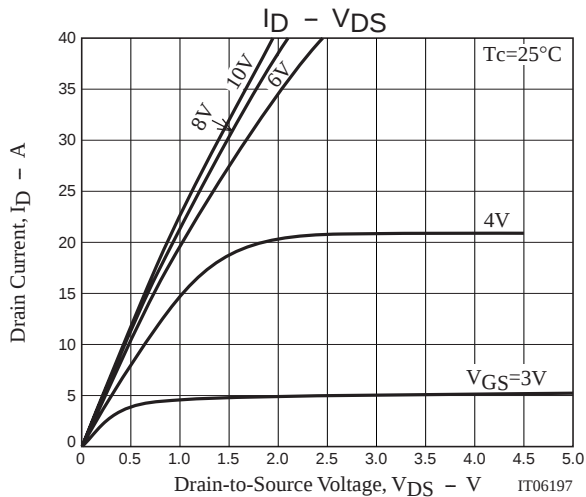
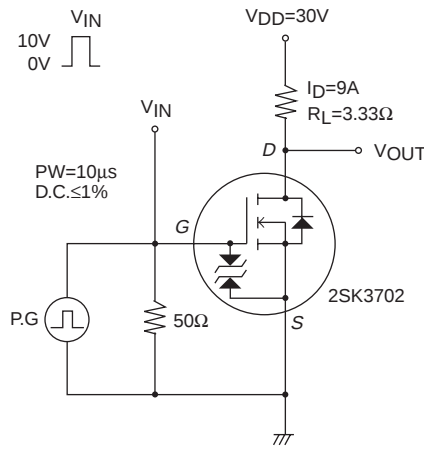
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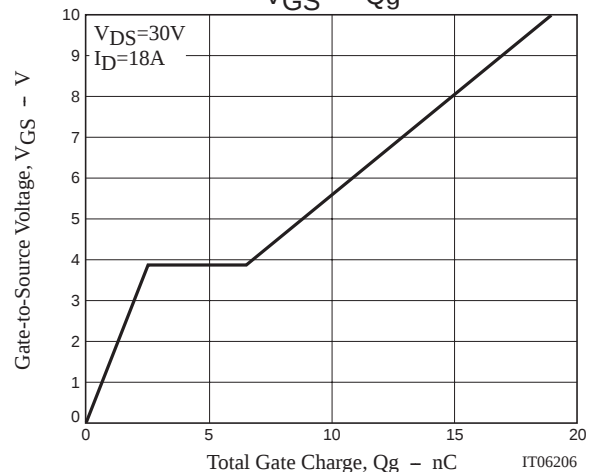
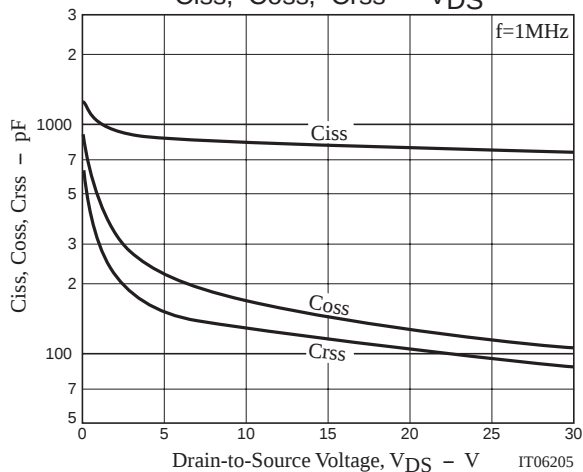
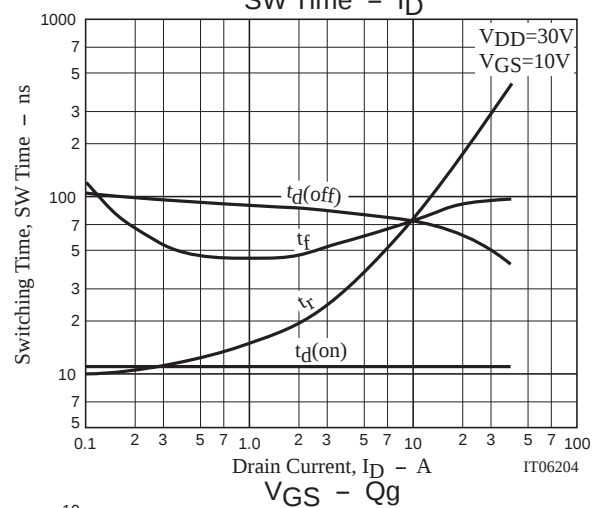
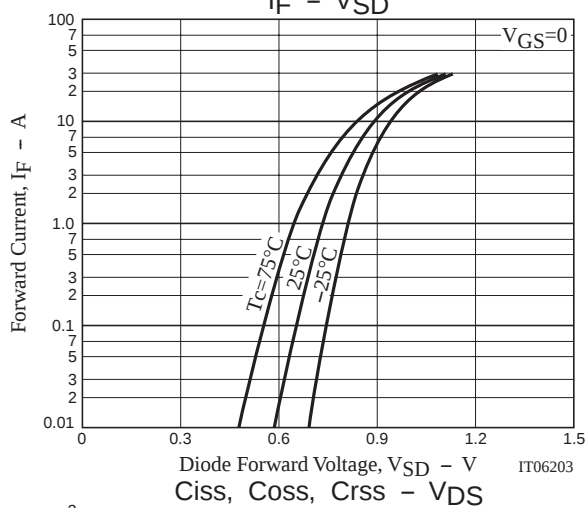
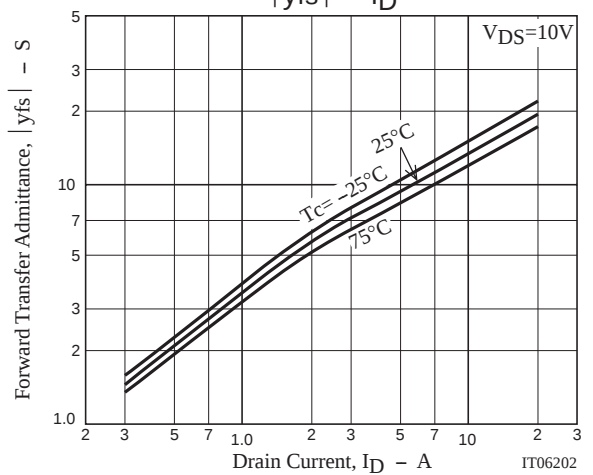
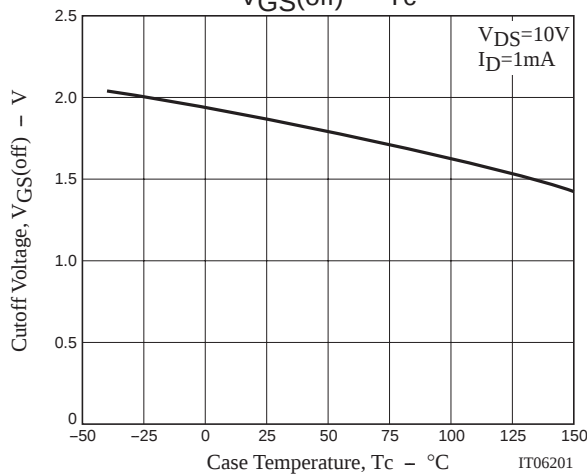
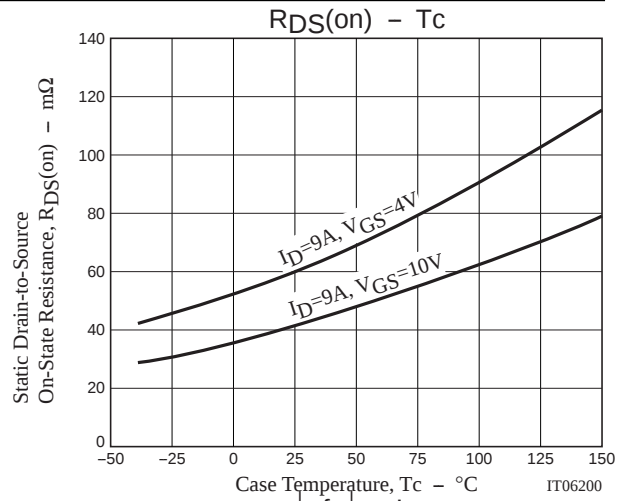
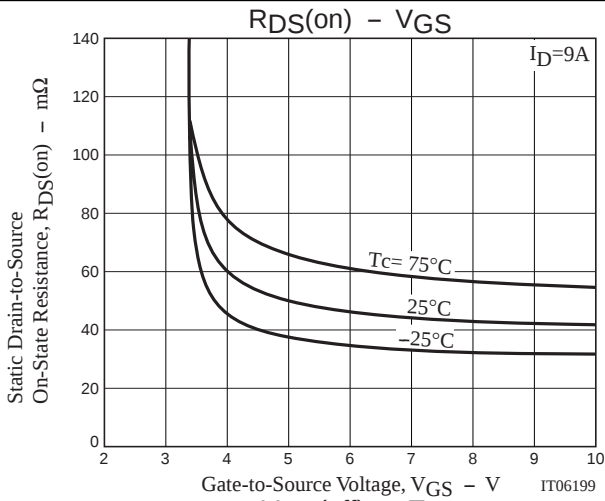
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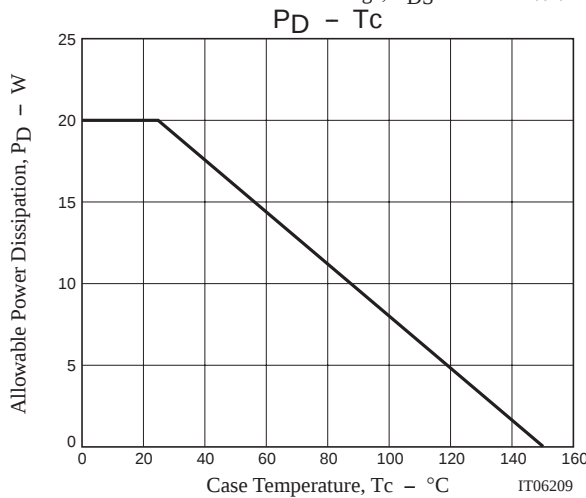
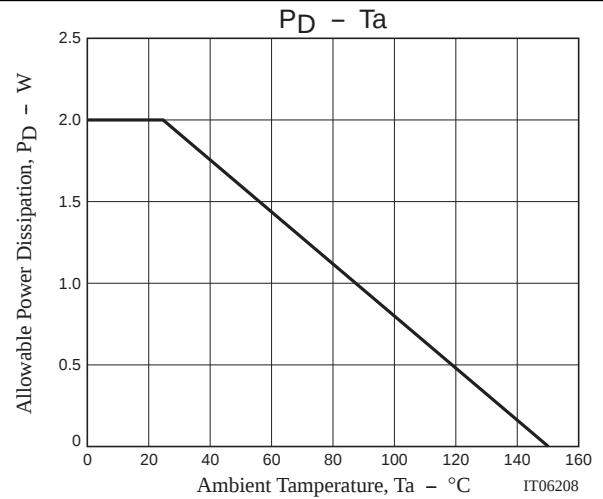
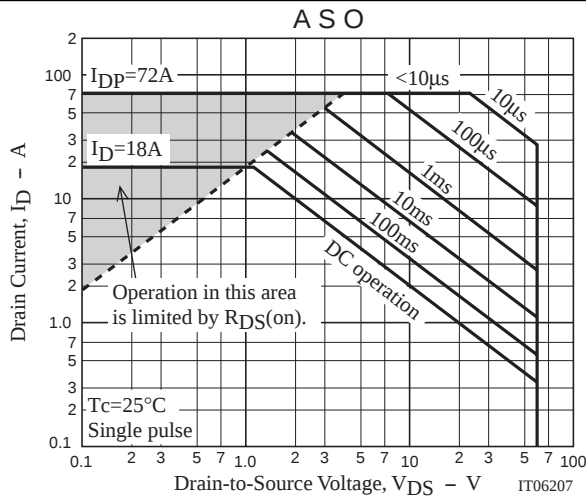
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=9A, V_{GS}=10V$		42	55	$m\Omega$
	$R_{DS(on)2}$	$I_D=9A, V_{GS}=4V$		60	85	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS}=20V, f=1MHz$		775		pF
Output Capacitance	C_{oss}	$V_{DS}=20V, f=1MHz$		125		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=20V, f=1MHz$		105		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		11		ns
Rise Time	t_r	See specified Test Circuit.		65		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		75		ns
Fall Time	t_f	See specified Test Circuit.		70		ns
Total Gate Charge	Q_g	$V_{DS}=30V, V_{GS}=10V, I_D=18A$		19		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=30V, V_{GS}=10V, I_D=18A$		2.5		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=30V, V_{GS}=10V, I_D=18A$		4.1		nC
Diode Forward Voltage	V_{SD}	$I_S=18A, V_{GS}=0$		0.98	1.2	V

Switching Time Test Circuit







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