



## DC / DC Converter Applications

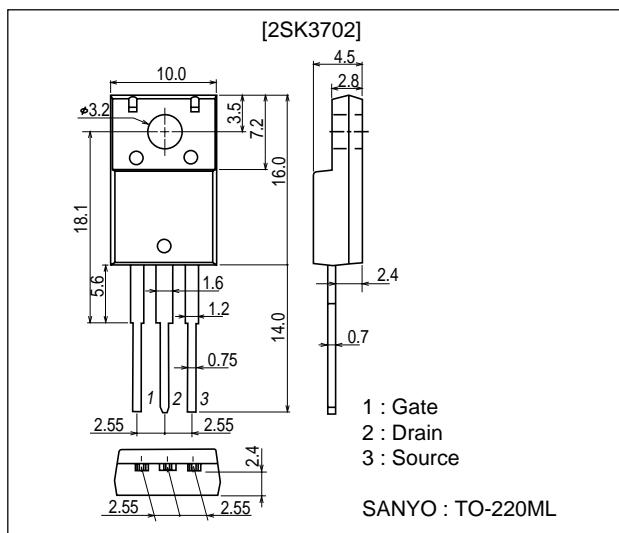
## Features

- 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 <sub>DSS</sub>			60	V
Gate-to-Source Voltage	V <sub>GSS</sub>			±20	V
Drain Current (DC)	I <sub>D</sub>			18	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%		72	A
Allowable Power Dissipation	P <sub>D</sub>	T <sub>c</sub> =25°C		2.0	W
Channel Temperature	T <sub>ch</sub>			20	W
Storage Temperature	T <sub>stg</sub>			150	°C
				-55 to +150	°C

## Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =1mA, V <sub>GS</sub> =0	60			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =60V, V <sub>GS</sub> =0			1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±16V, V <sub>DS</sub> =0			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA	1.2		2.6	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =9A	8	12		S

Marking : K3702

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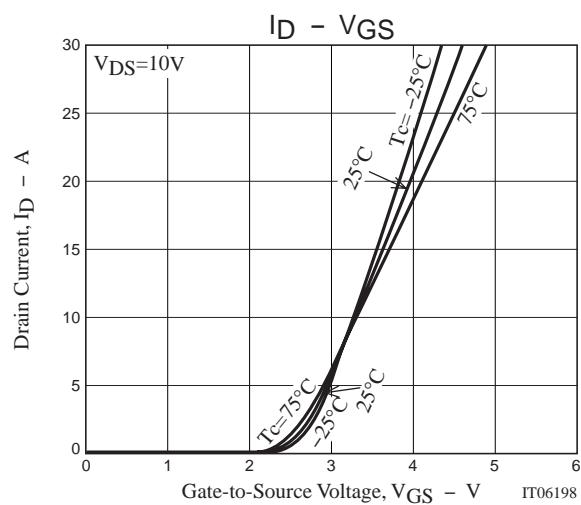
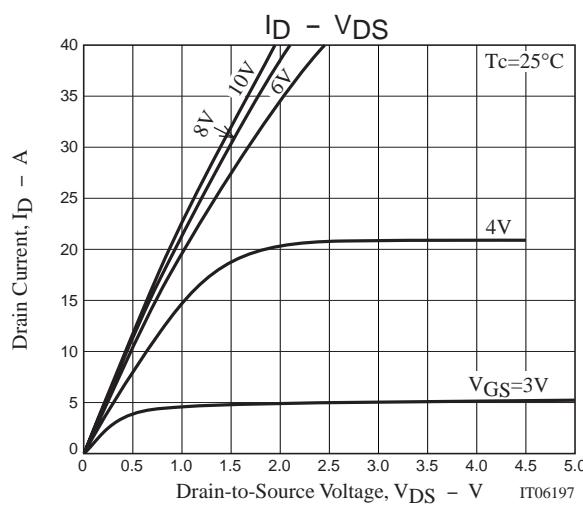
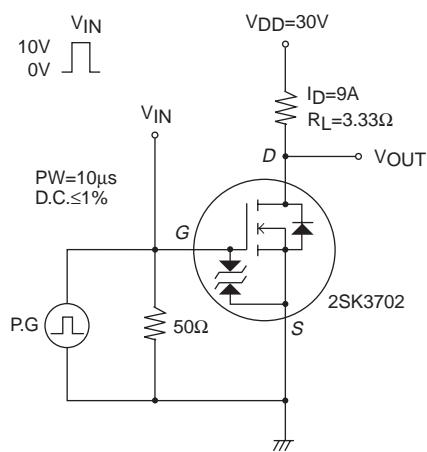
SANYO Electric Co.,Ltd. Semiconductor Company

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

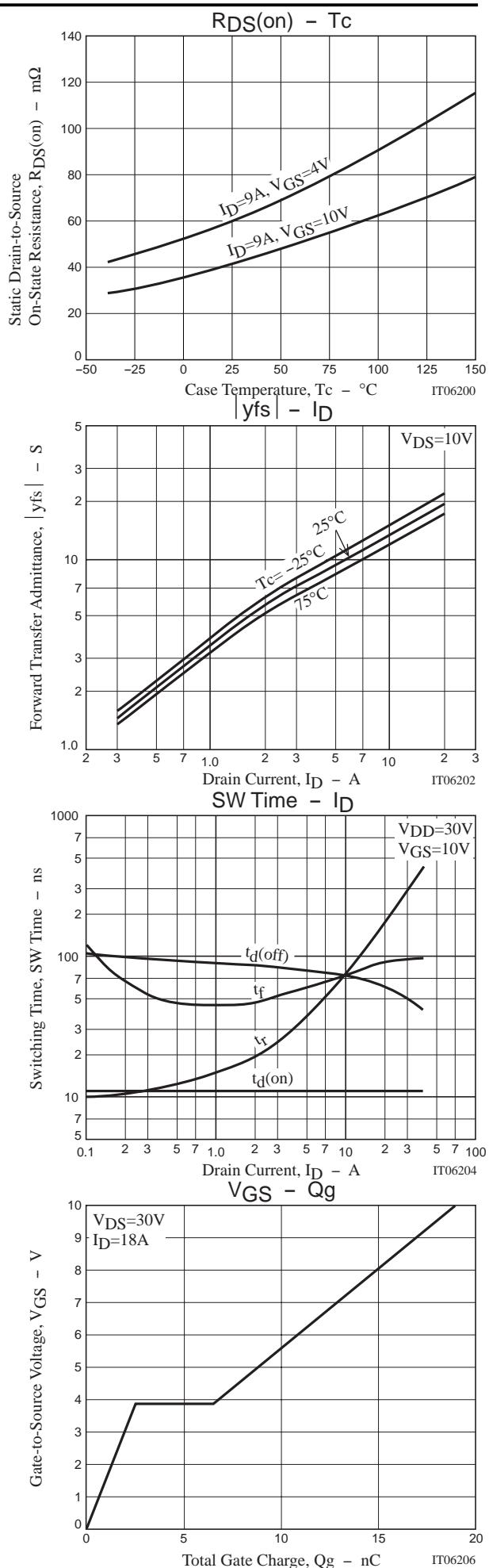
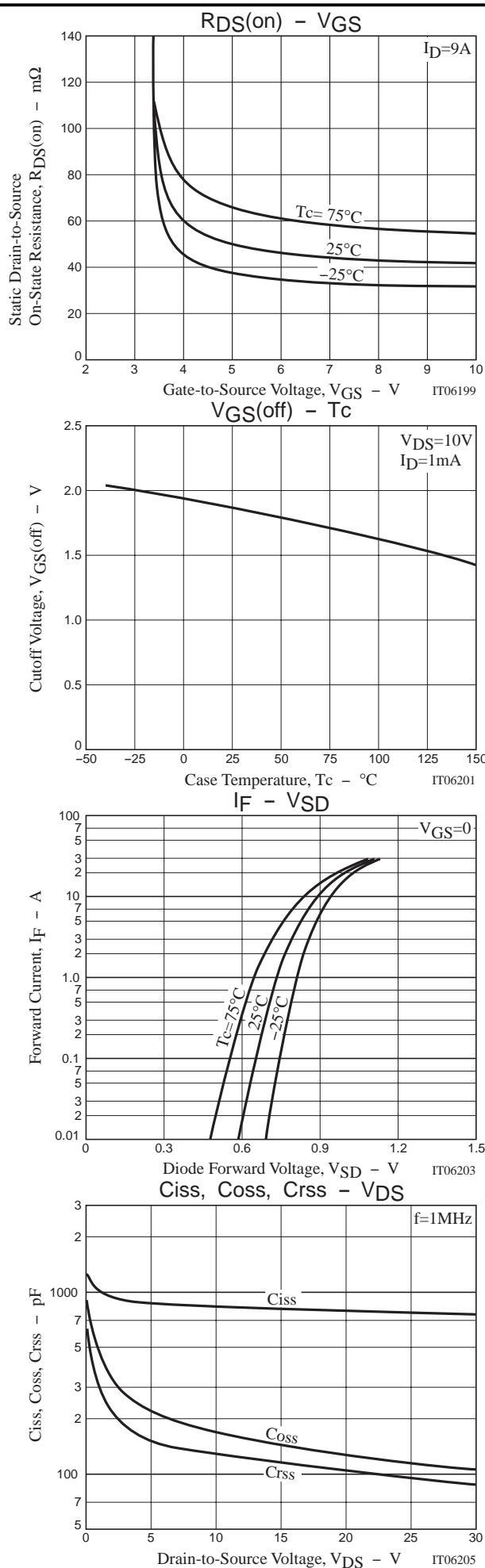
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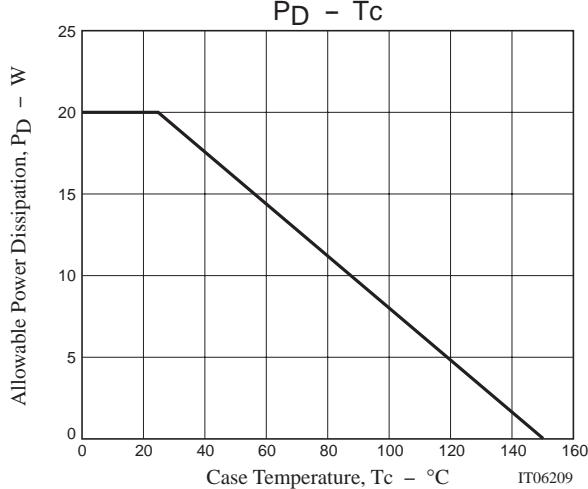
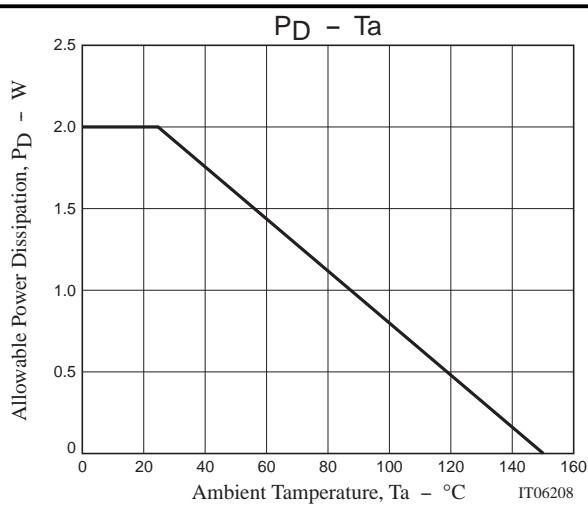
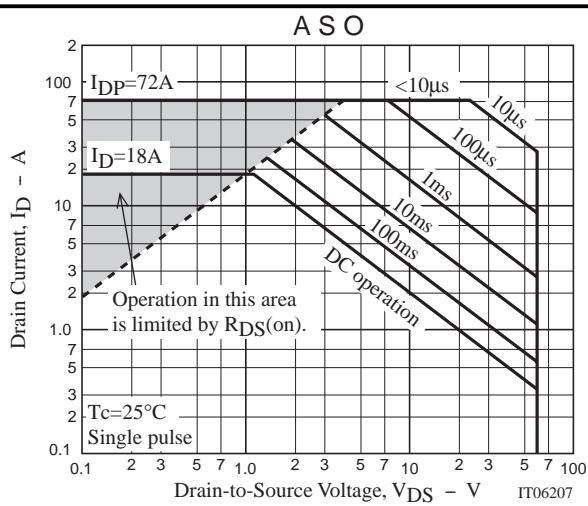
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=9A, V_{GS}=10V$		42	55	$m\Omega$
	$R_{DS(on)2}$	$I_D=9A, V_{GS}=4V$		60	85	$m\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=20V, f=1MHz$		775		$pF$
Output Capacitance	$C_{oss}$	$V_{DS}=20V, f=1MHz$		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



# 2SK3702





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