



DC / DC Converter Applications

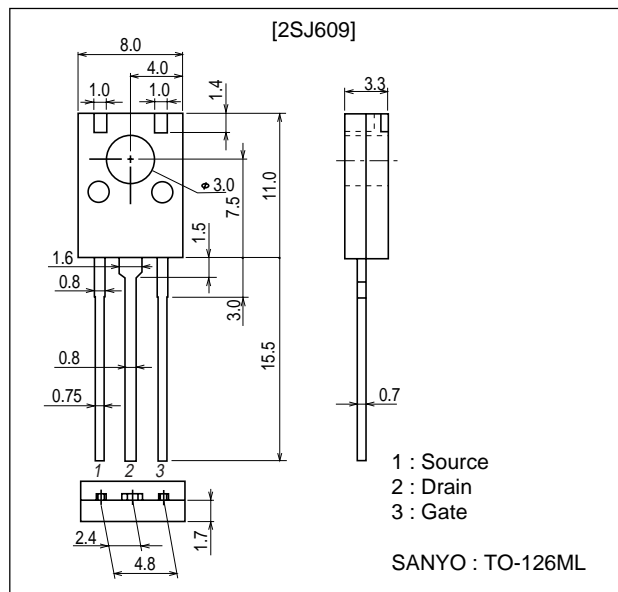
Features

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

Package Dimensions

unit : mm

2190



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		-5	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	-20	A
Allowable Power Dissipation	P_D		1	W
		$T_c = 25^\circ C$	10	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}	$V_{DS} = -60V$, $V_{GS} = 0$			-10	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 16V$, $V_{DS} = 0$			± 10	μA

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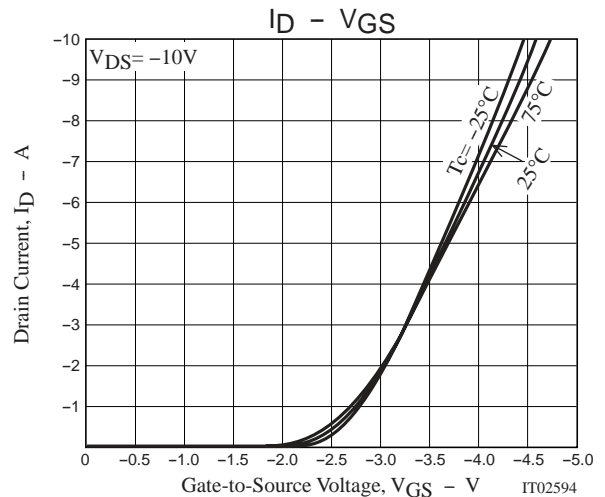
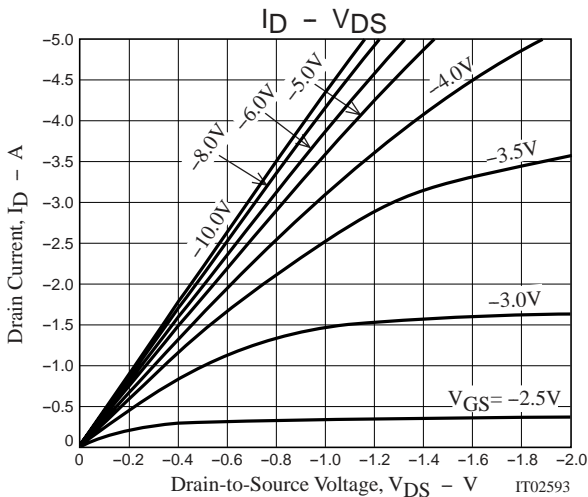
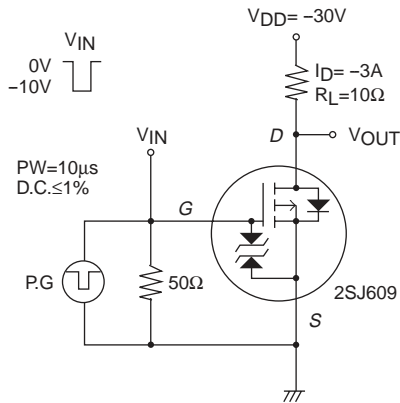
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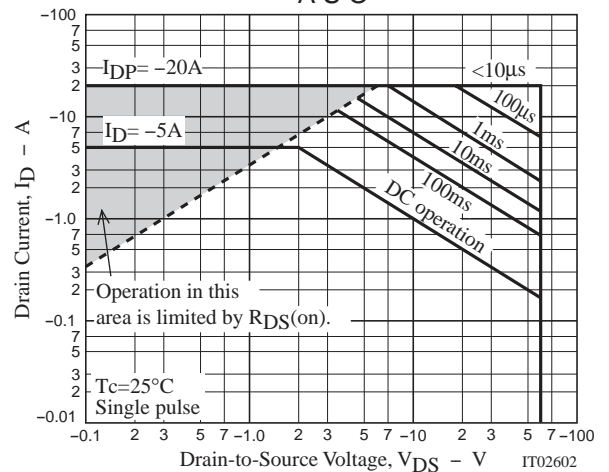
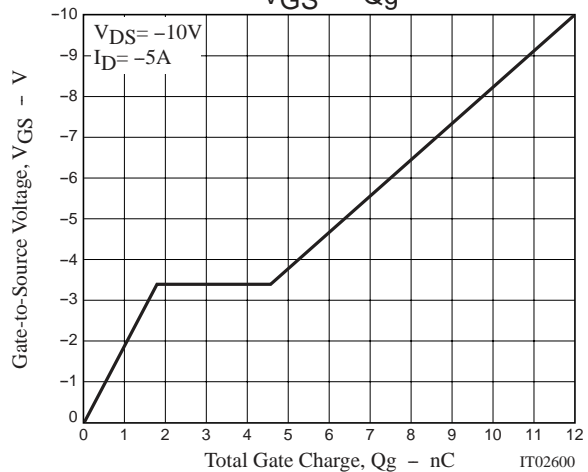
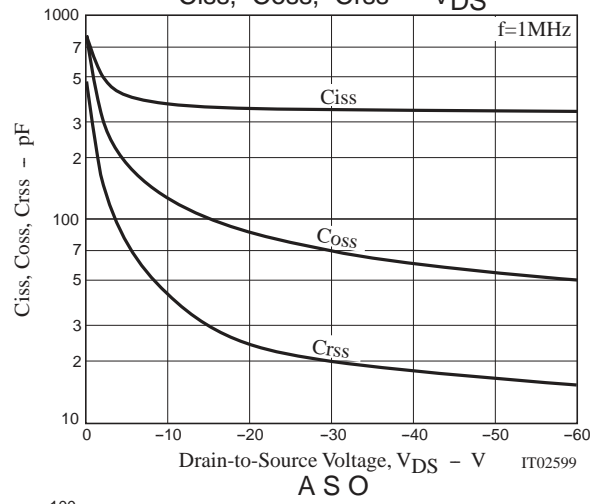
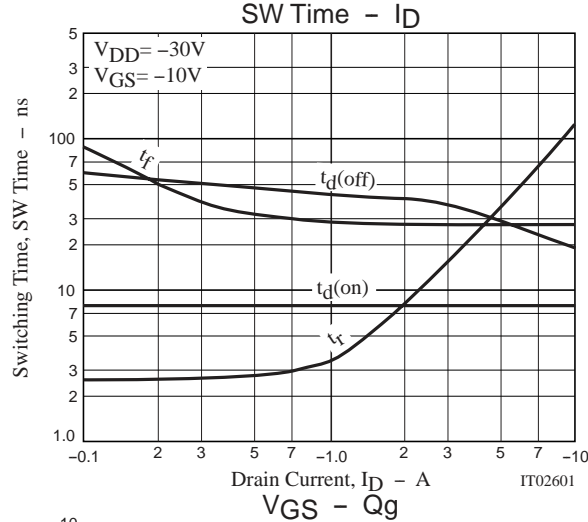
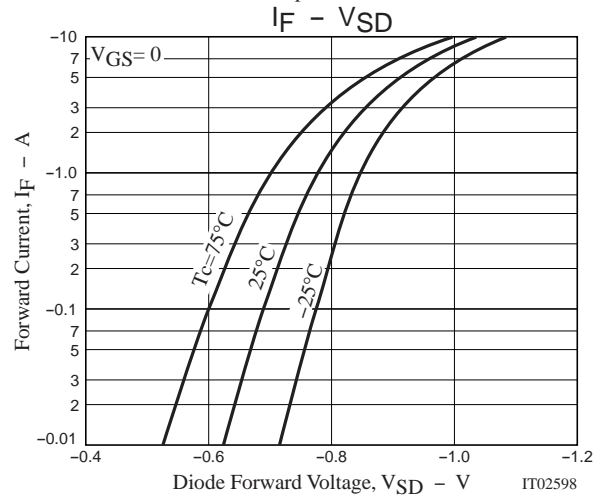
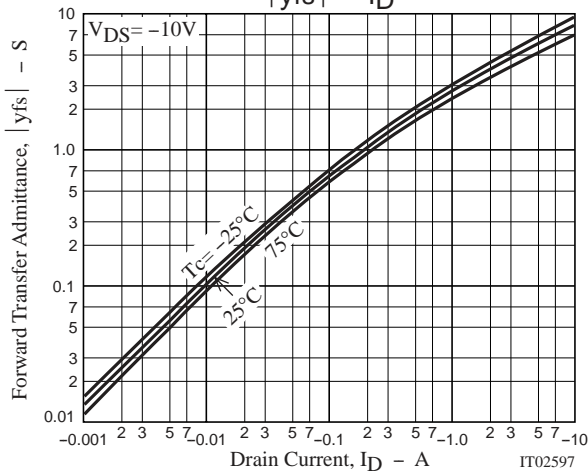
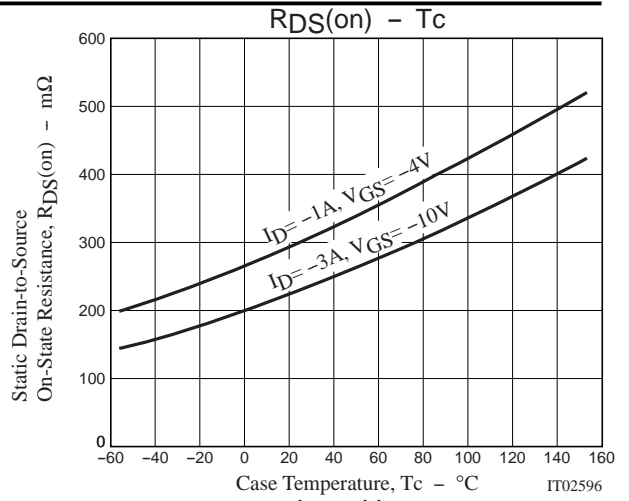
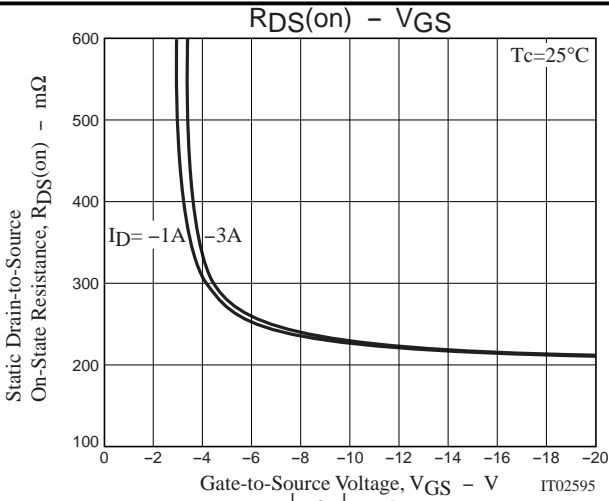
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=-10V, I_D=-1mA$	-1.0		-2.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=-10V, I_D=-3A$	3.2	4.6		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=-3A, V_{GS}=-10V$		225	295	$m\Omega$
	$R_{DS(on)2}$	$I_D=-1A, V_{GS}=-4V$		305	425	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS}=-20V, f=1MHz$		350		pF
Output Capacitance	C_{oss}	$V_{DS}=-20V, f=1MHz$		90		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=-20V, f=1MHz$		25		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit		8		ns
Rise Time	t_r	See specified Test Circuit		15		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit		37		ns
Fall Time	t_f	See specified Test Circuit		28		ns
Total Gate Charge	Q_g	$V_{DS}=-10V, V_{GS}=-10V, I_D=-5A$		12		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=-10V, V_{GS}=-10V, I_D=-5A$		1.7		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=-10V, V_{GS}=-10V, I_D=-5A$		2.9		nC
Diode Forward Voltage	V_{SD}	$I_S=-5A, V_{GS}=0$		-0.91	-1.2	V

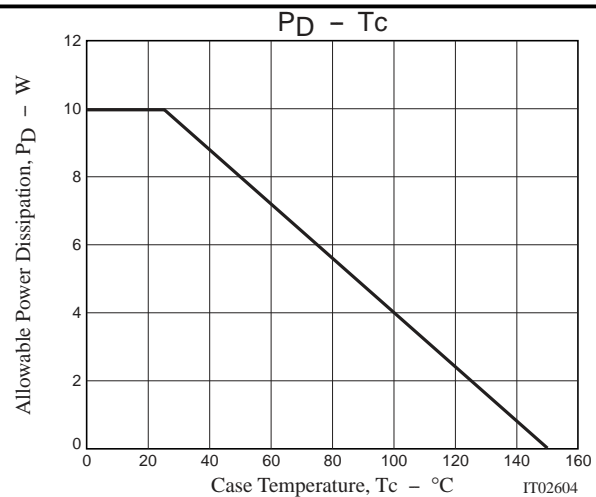
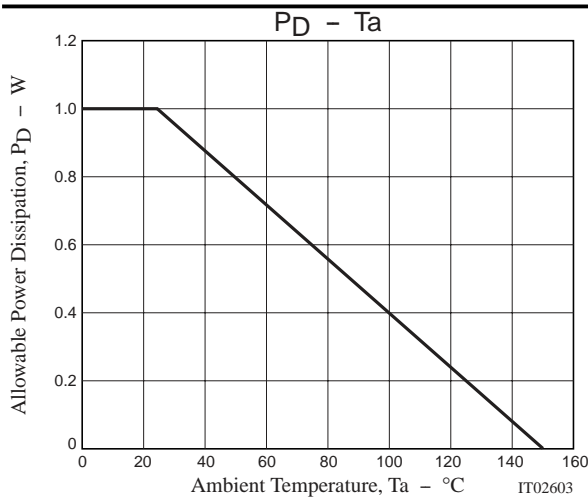
Switching Time Test Circuit



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