



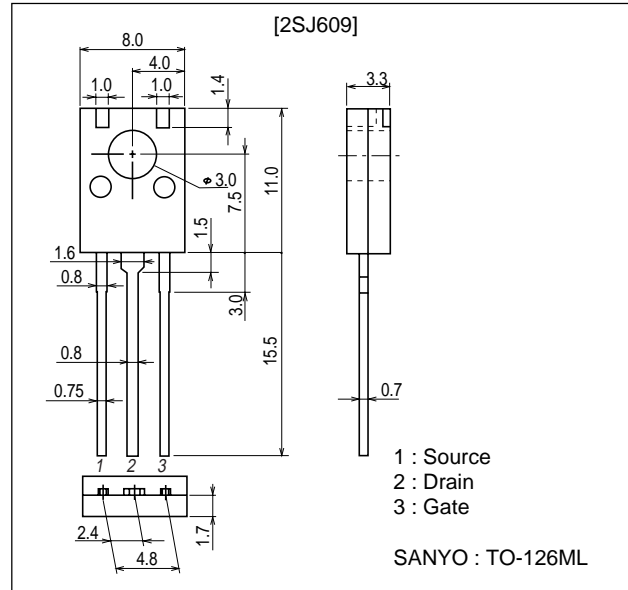
**DC / DC Converter Applications**

**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 <sub>DSS</sub>		-60	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		-5	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-20	A
Allowable Power Dissipation	P <sub>D</sub>		1	W
		Tc=25°C	10	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-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 <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			-10	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±16V, V <sub>DS</sub> =0			±10	μA

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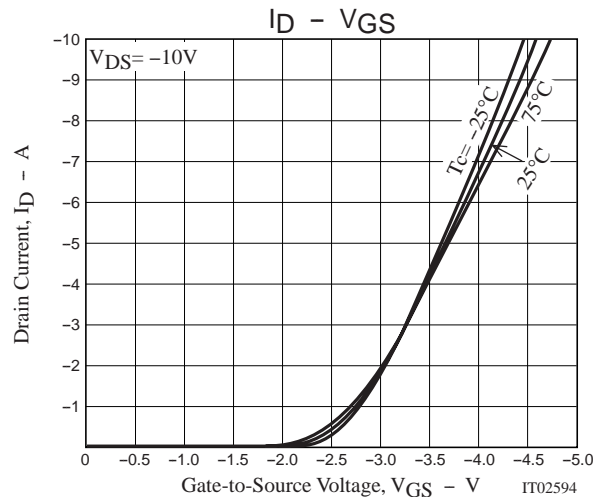
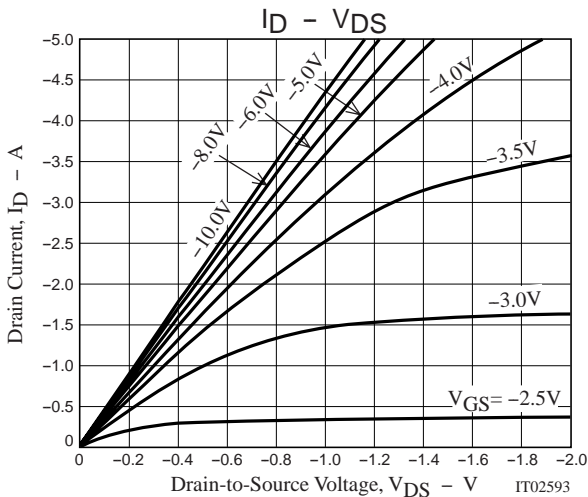
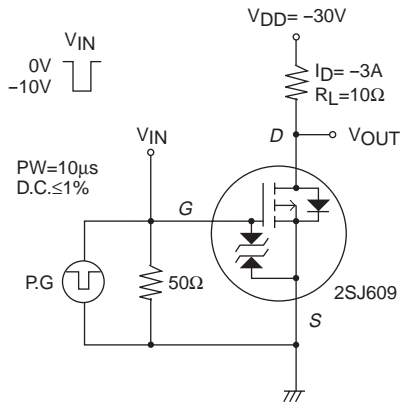
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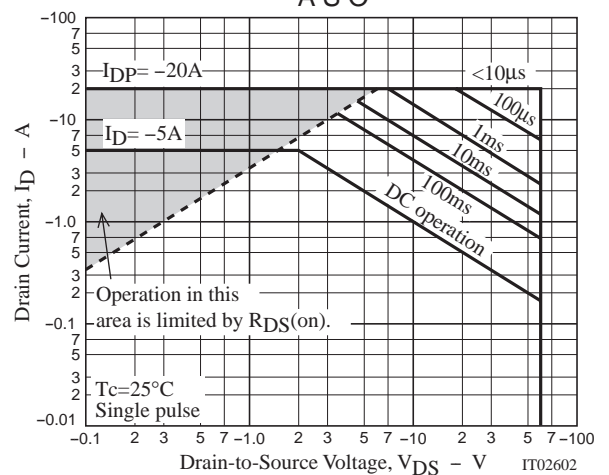
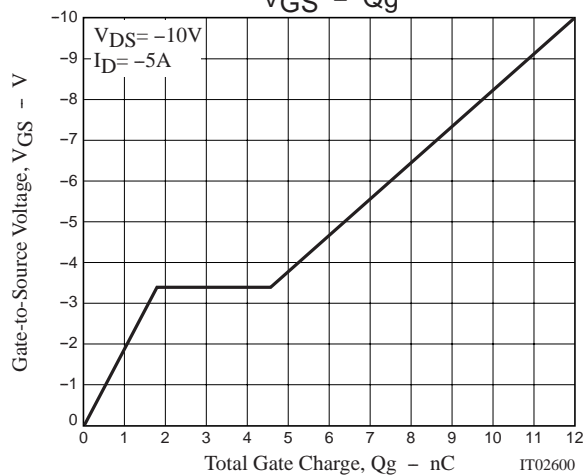
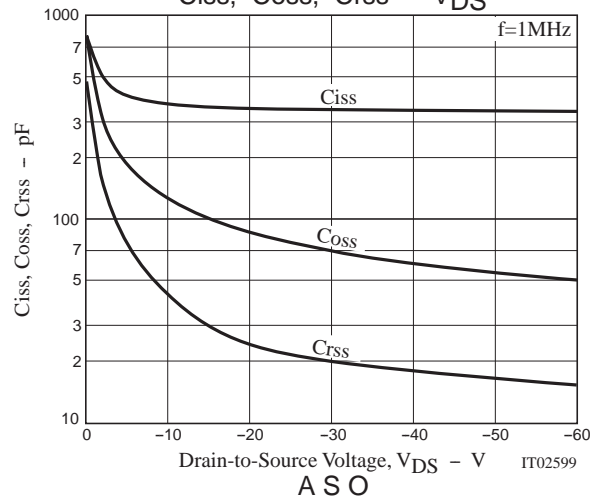
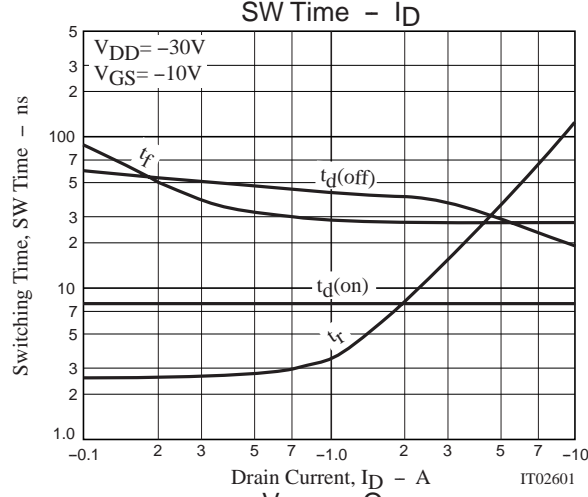
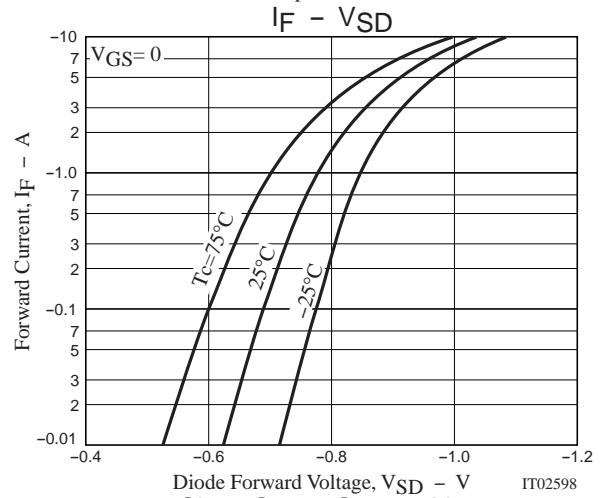
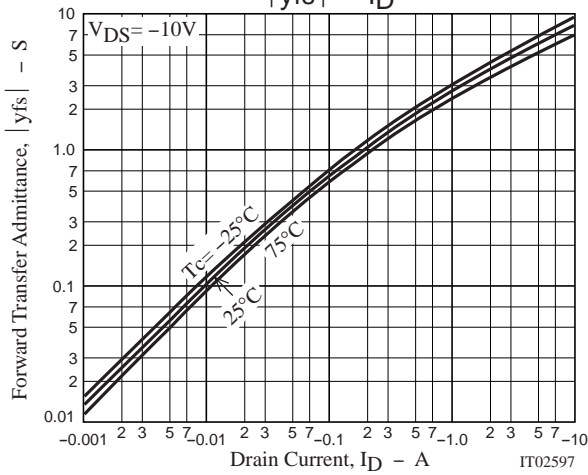
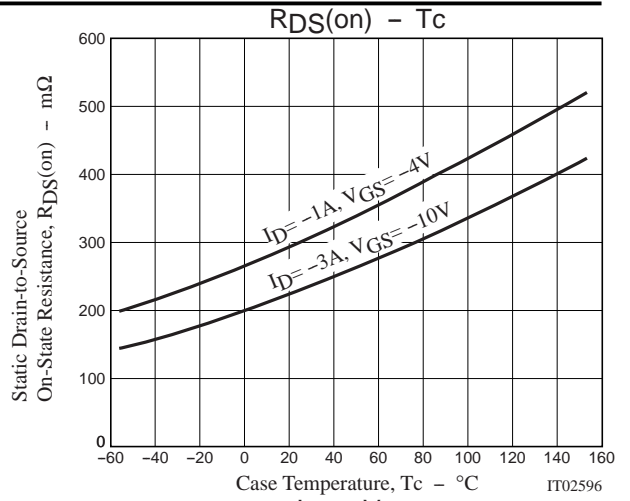
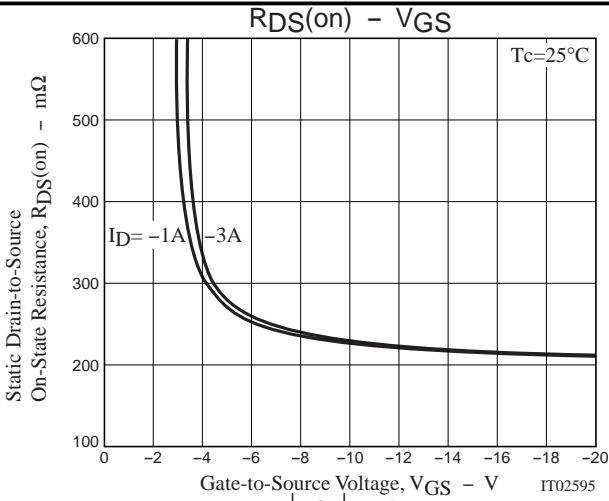
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=-10V, I_D=-1mA$	-1.0		-2.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=-10V, I_D=-3A$	3.2	4.6		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=-3A, V_{GS}=-10V$		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

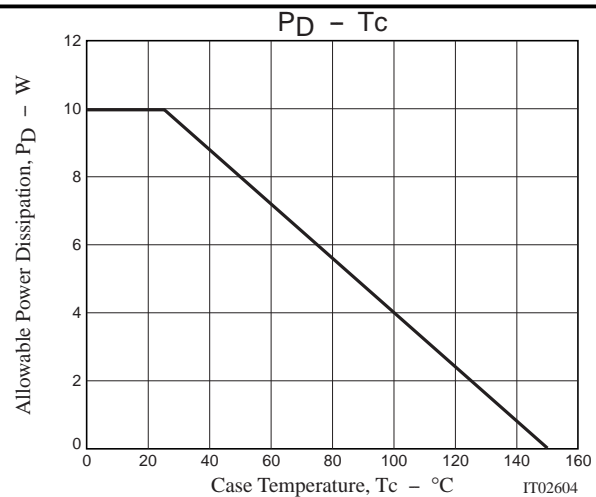
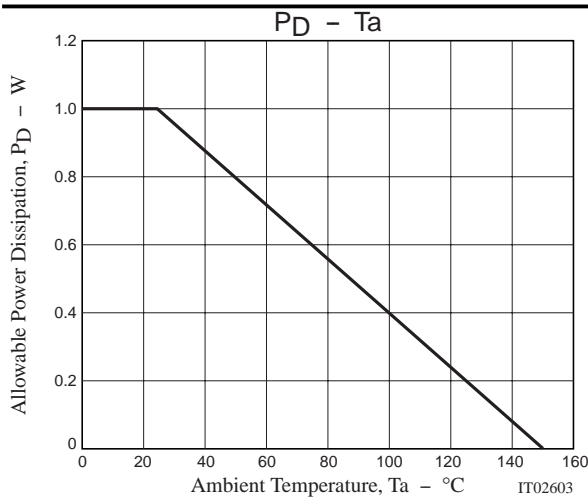
## Switching Time Test Circuit



# 2SJ609



## 2SJ609



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