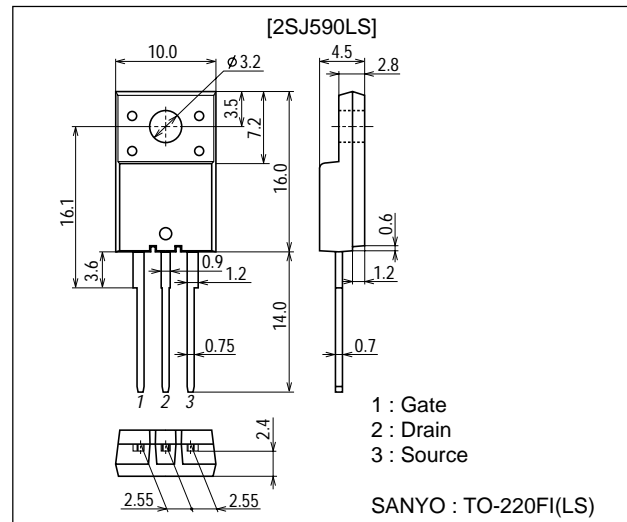


**2SJ590LS****DC / DC Converter Applications****Features**

- Low ON-resistance.
- 4V drive.

**Package Dimensions**unit : mm  
2078C**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>		-20	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-80	A
Allowable Power Dissipation	P <sub>D</sub>		2.0	W
		T <sub>c</sub> =25°C	25	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 <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			-10	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	-1.0		-2.4	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-10A	13	18		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-10A, V <sub>GS</sub> =-10V		43	56	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-10A, V <sub>GS</sub> =-4V		62	87	mΩ

Continued on next page.

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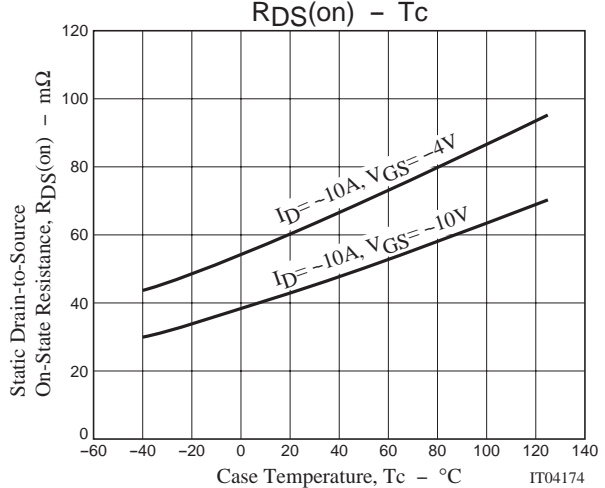
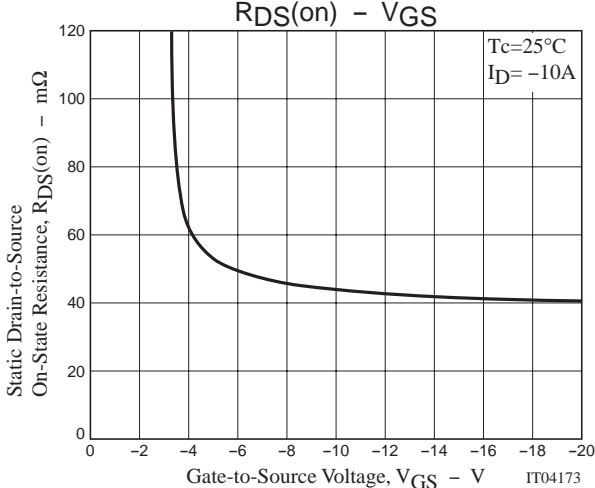
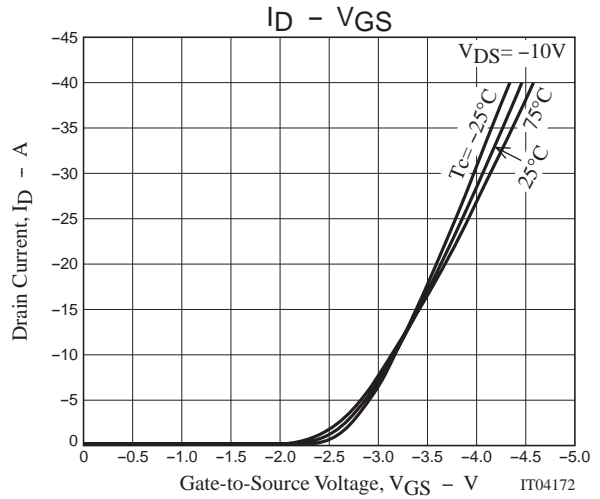
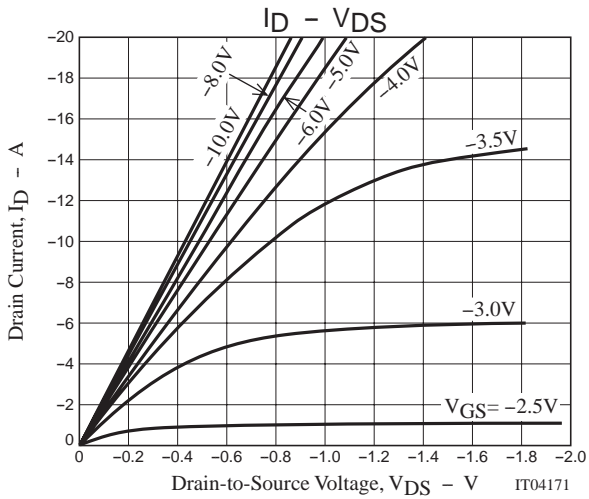
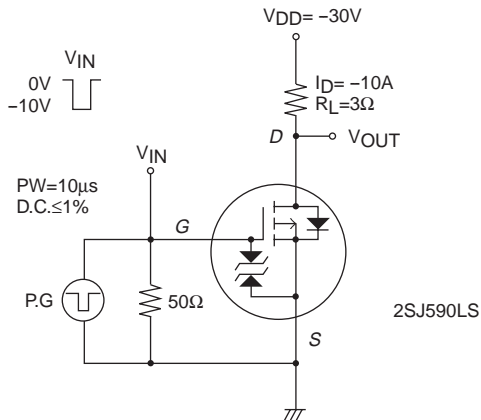
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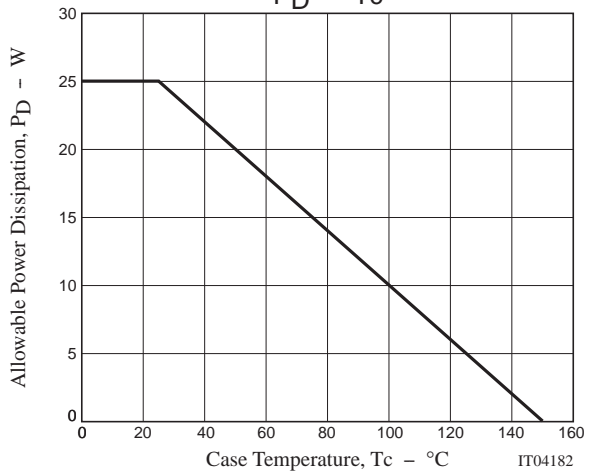
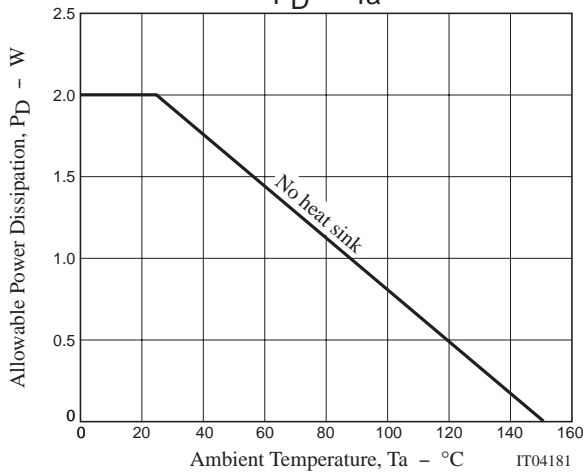
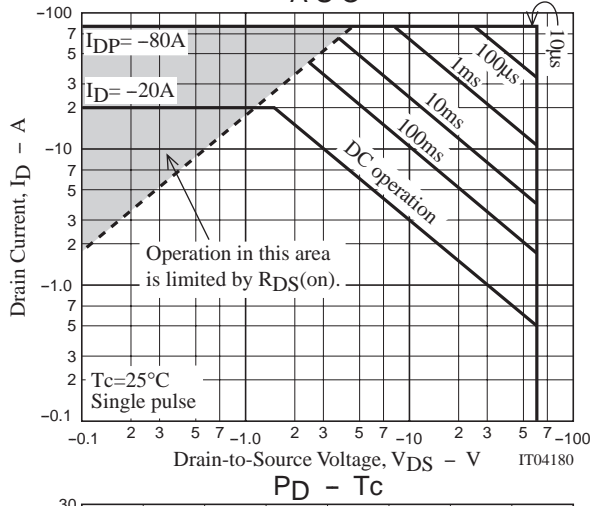
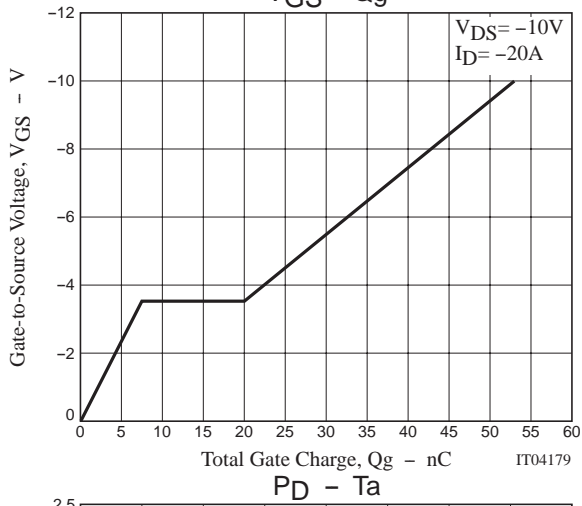
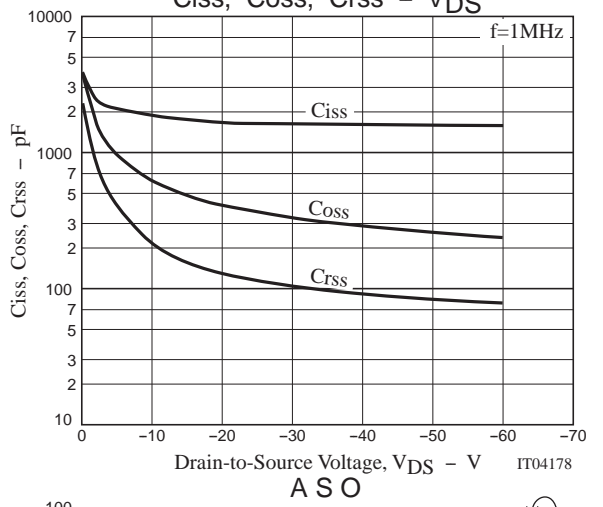
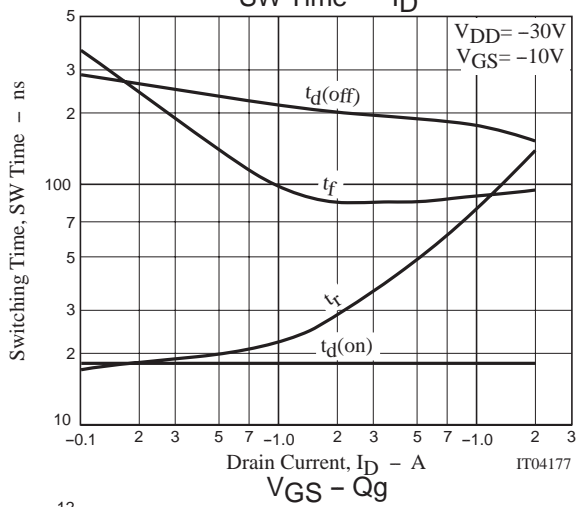
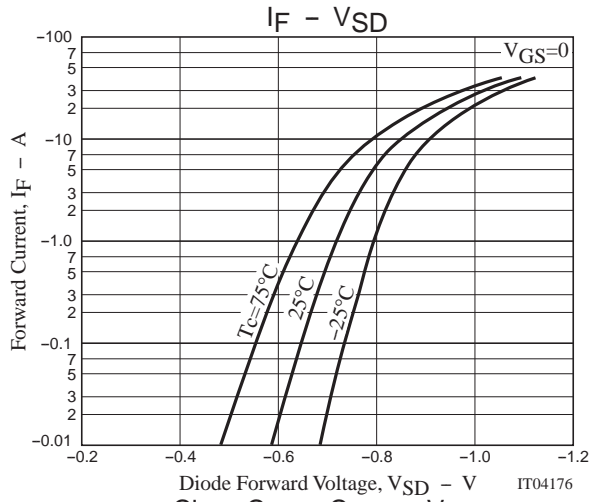
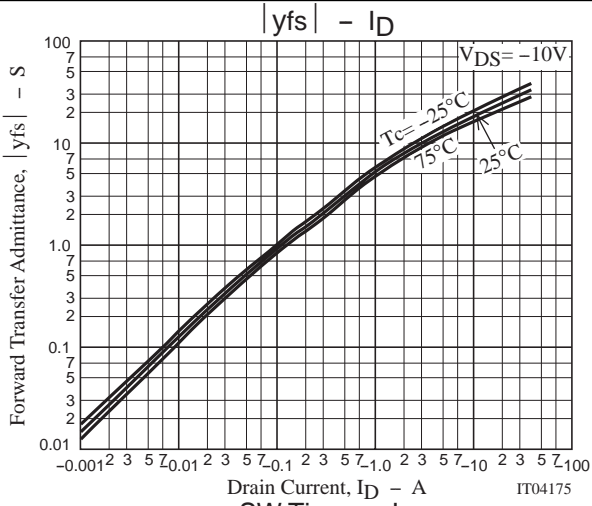
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V <sub>DS</sub> =-20V, f=1MHz		1700		pF
Output Capacitance	Coss	V <sub>DS</sub> =-20V, f=1MHz		400		pF
Reverse Transfer Capacitance	Crss	V <sub>DS</sub> =-20V, f=1MHz		130		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit.		18		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit.		80		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit.		180		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		90		ns
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-20A		53		nC
Gate-to-Source Charge	Q <sub>gs</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-20A		7		nC
Gate-to-Drain "Miller" Charge	Q <sub>gd</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-20A		13		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-20A, V <sub>GS</sub> =0	-0.95		-1.2	V

## Switching Time Test Circuit



# 2SJ590LS



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