



2SJ590LS

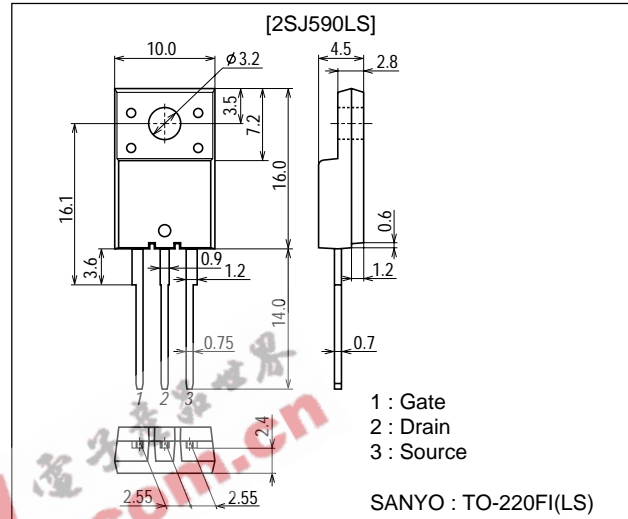
DC / DC Converter Applications

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 _{DSS}		-60	V
Gate-to-Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		-20	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	-80	A
Allowable Power Dissipation	P _D	T _c =25°C	2.0	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-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 _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} =±16V, V _{DS} =0			±10	μA
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 =-10A	13	18		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =-10A, V _{GS} =-10V		43	56	mΩ
	R _{DS(on)2}	I _D =-10A, V _{GS} =-4V		62	87	mΩ

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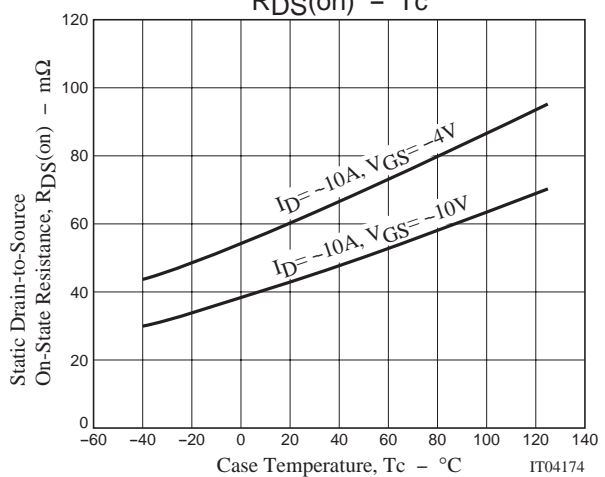
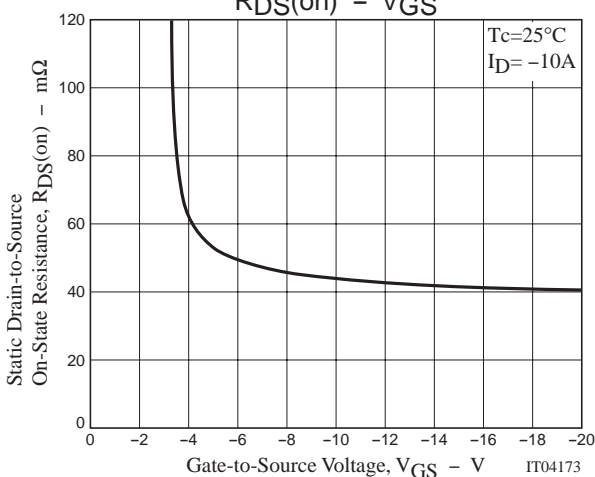
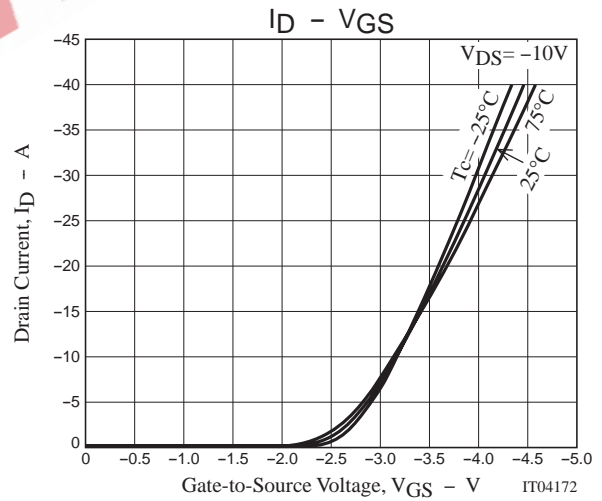
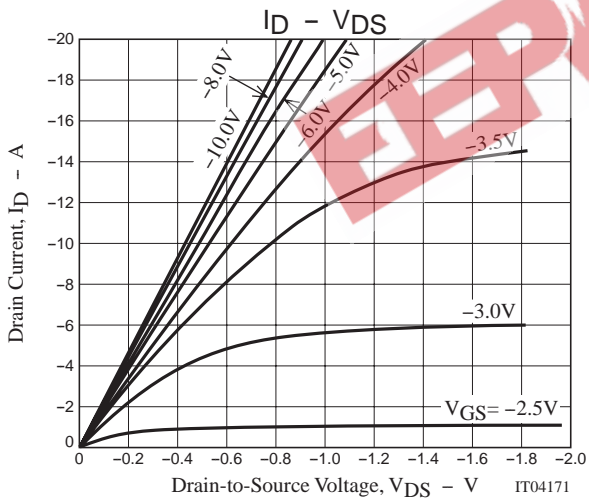
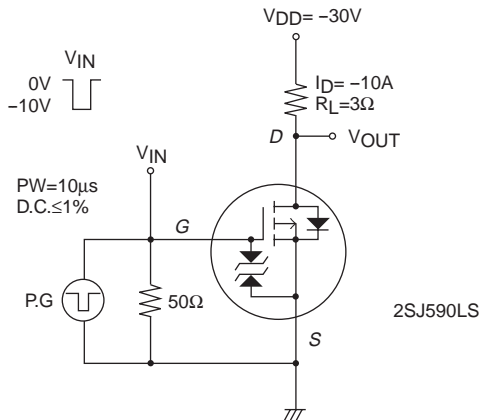
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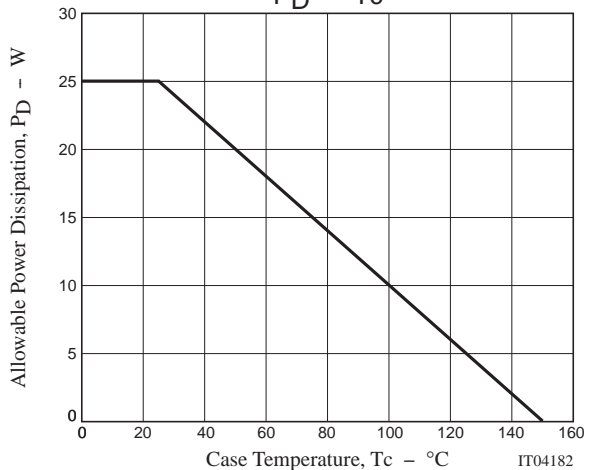
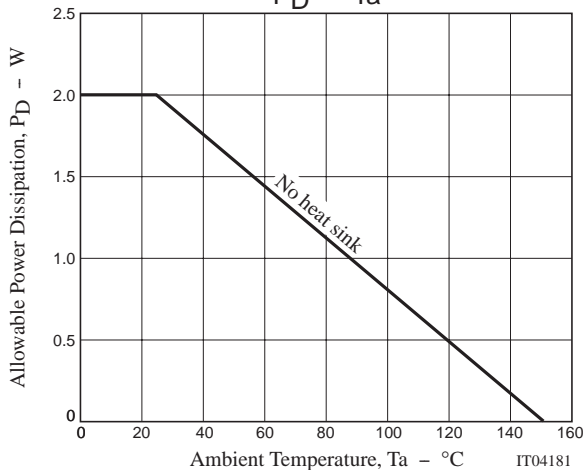
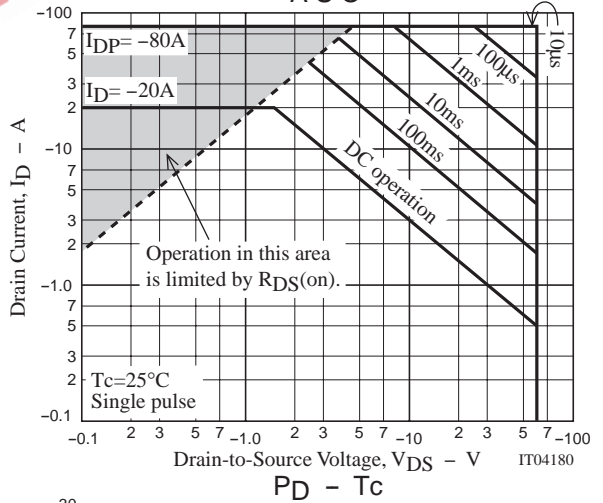
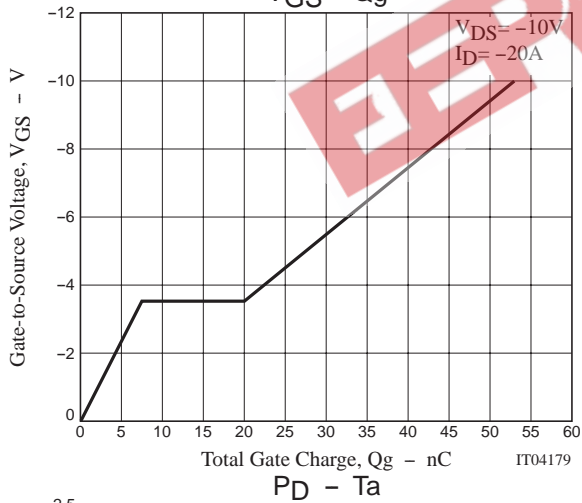
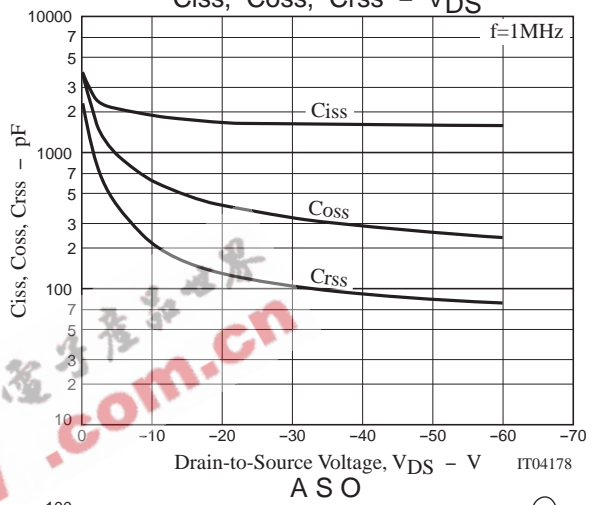
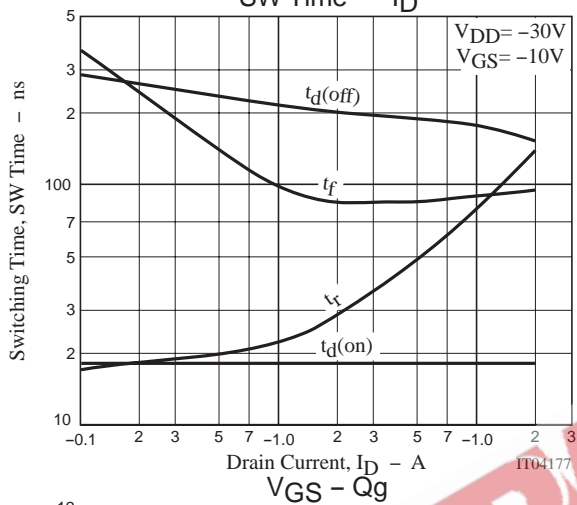
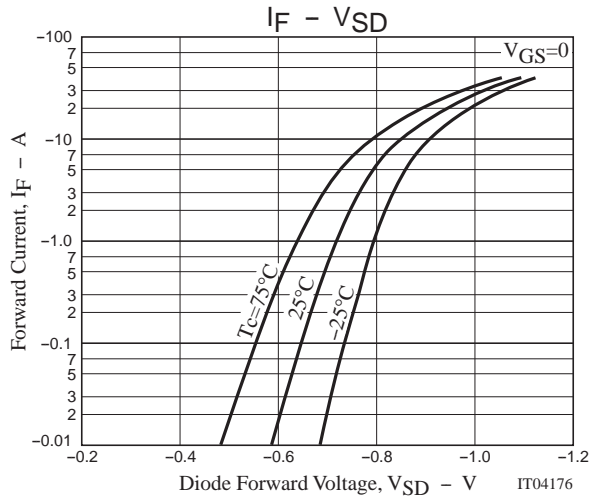
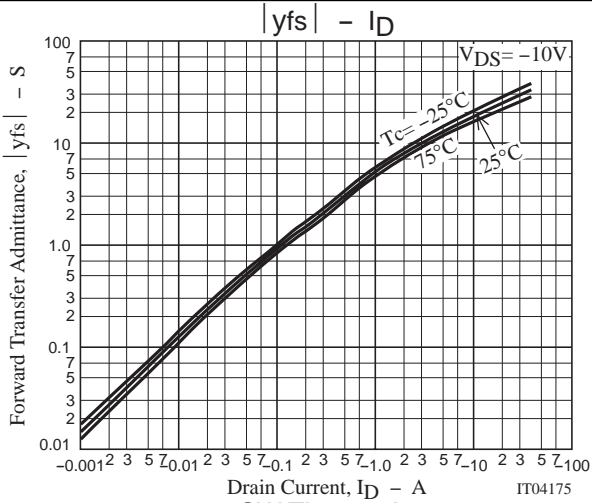
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V _{DS} =-20V, f=1MHz		1700		pF
Output Capacitance	Coss	V _{DS} =-20V, f=1MHz		400		pF
Reverse Transfer Capacitance	Crss	V _{DS} =-20V, f=1MHz		130		pF
Turn-ON Delay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

Switching Time Test Circuit



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