



# 2SJ589LS

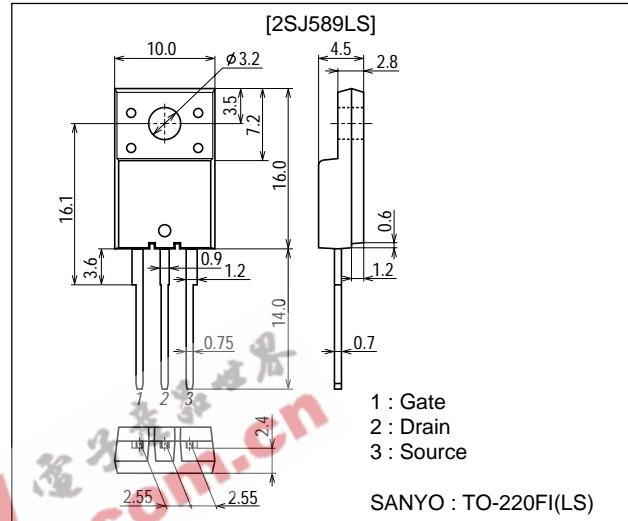
## DC / DC Converter Applications

### 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>		-15	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-60	A
Allowable Power Dissipation	P <sub>D</sub>	T <sub>c</sub> =25°C	2.0	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> =-8A	10	14		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-8A, V <sub>GS</sub> =-10V		58	80	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-8A, V <sub>GS</sub> =-4V		80	115	mΩ

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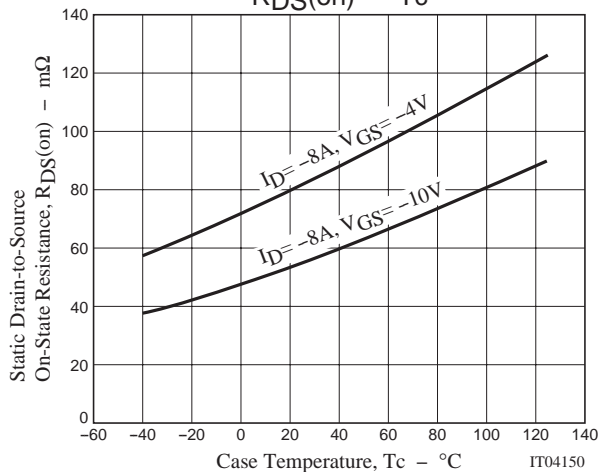
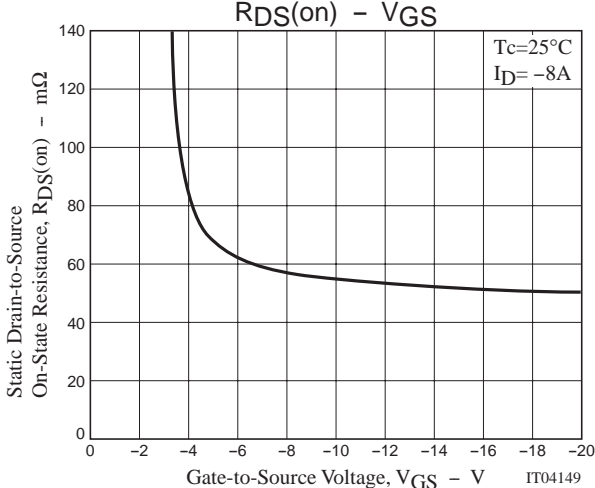
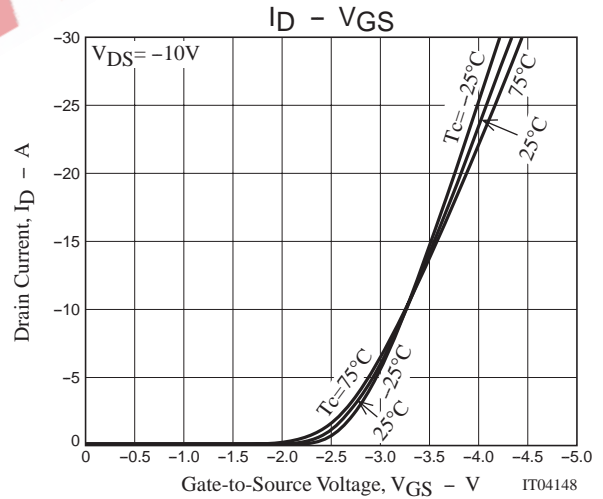
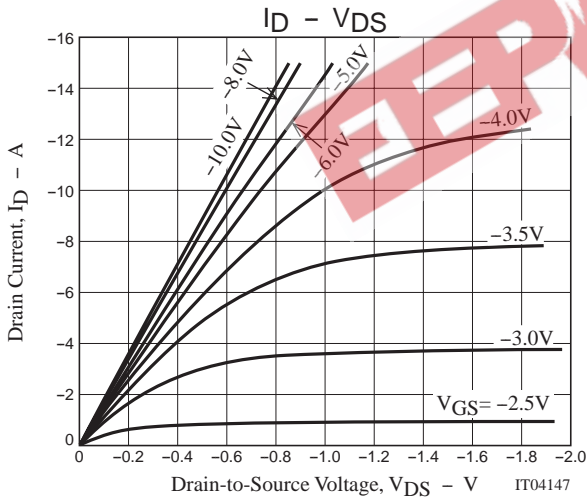
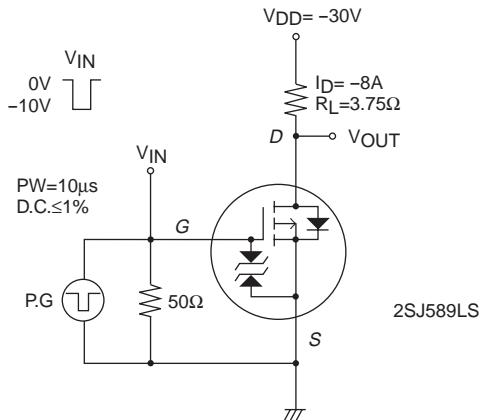
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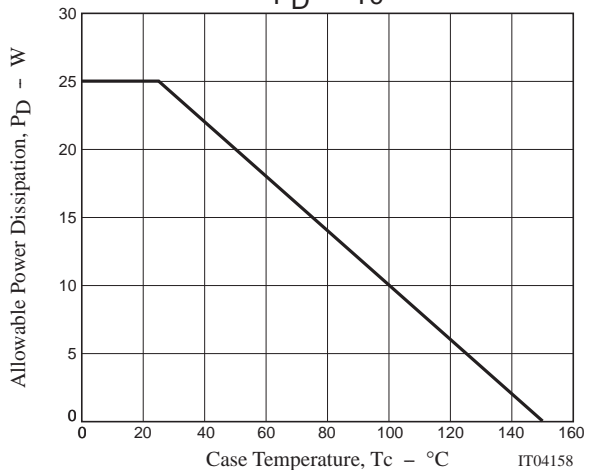
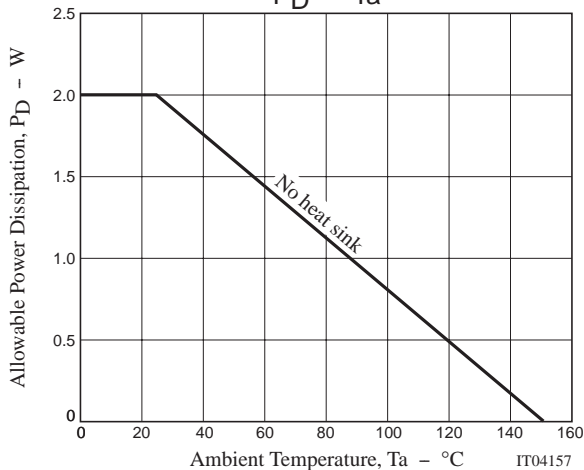
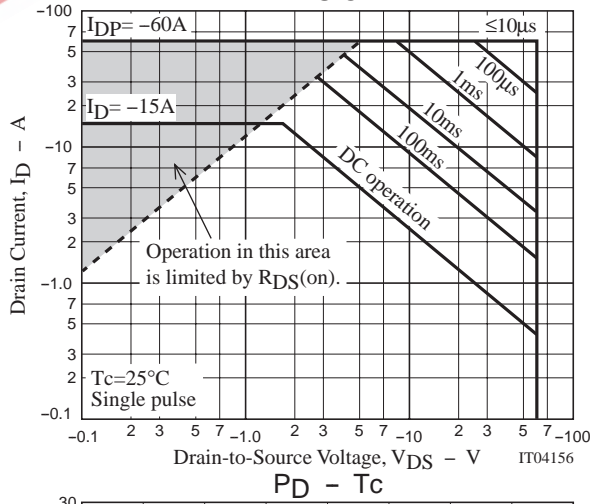
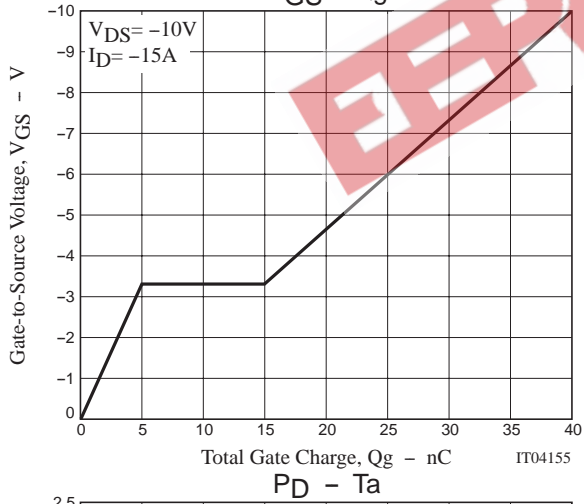
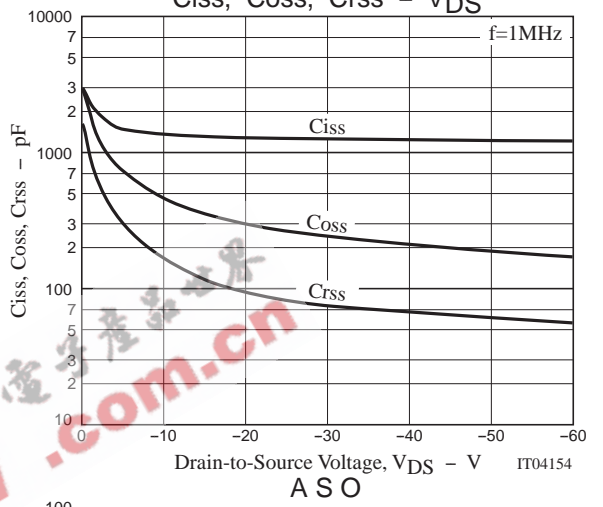
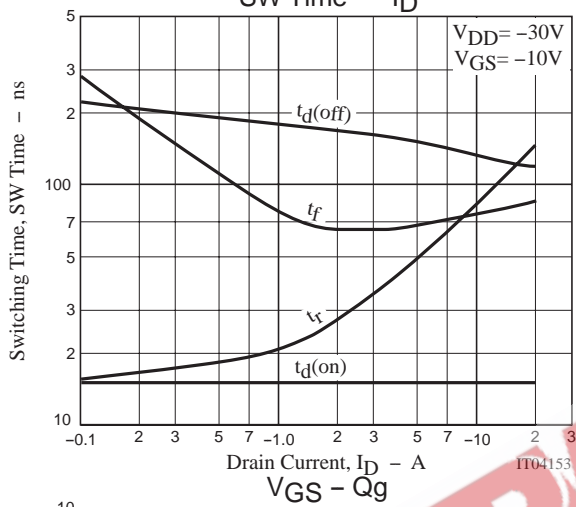
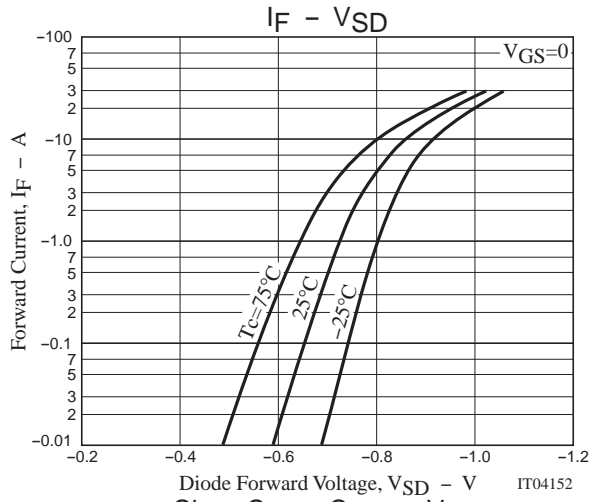
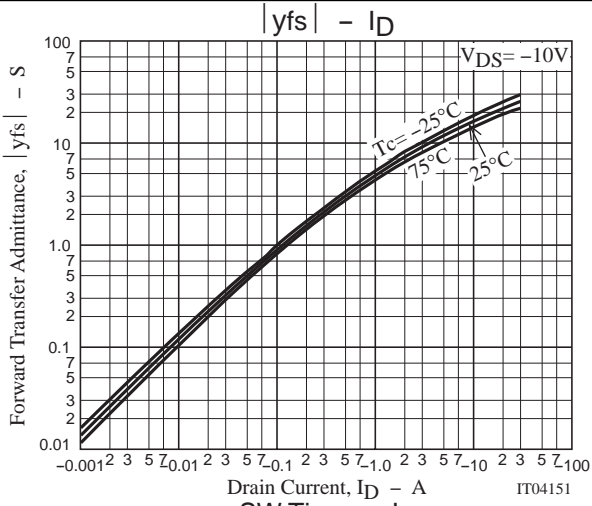
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	$C_{iss}$	$V_{DS}=-20V, f=1MHz$		1300		pF
Output Capacitance	$C_{oss}$	$V_{DS}=-20V, f=1MHz$		300		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=-20V, f=1MHz$		90		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		15		ns
Rise Time	$t_r$	See specified Test Circuit.		70		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		140		ns
Fall Time	$t_f$	See specified Test Circuit.		72		ns
Total Gate Charge	$Q_g$	$V_{DS}=-10V, V_{GS}=-10V, I_D=-15A$		40		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS}=-10V, V_{GS}=-10V, I_D=-15A$		5		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS}=-10V, V_{GS}=-10V, I_D=-15A$		10		nC
Diode Forward Voltage	$V_{SD}$	$I_S=-15A, V_{GS}=0$		-0.91	-1.2	V

## Switching Time Test Circuit



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