

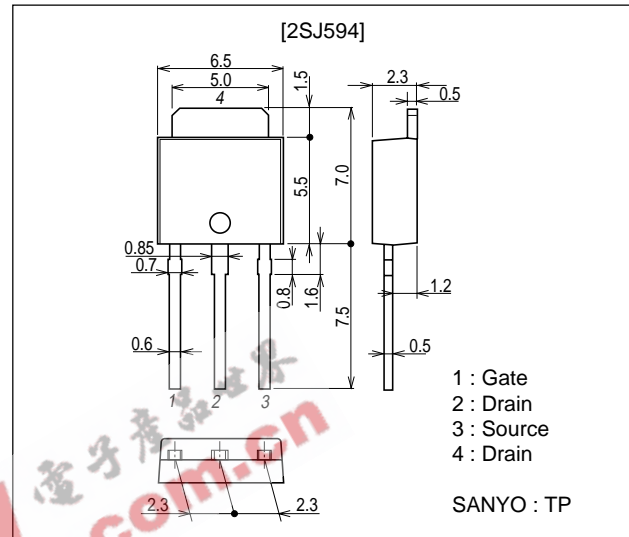
**2SJ594****DC / DC Converter Applications****Features**

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

**Package Dimensions**

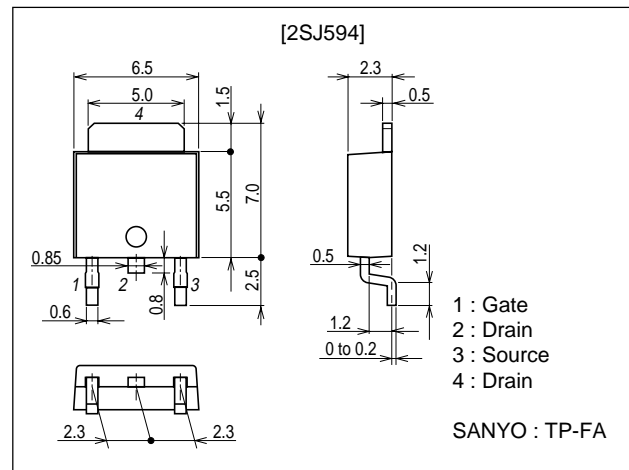
unit : mm

2083B



unit : mm

2092B



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## Specifications

### Absolute Maximum Ratings at Ta=25°C

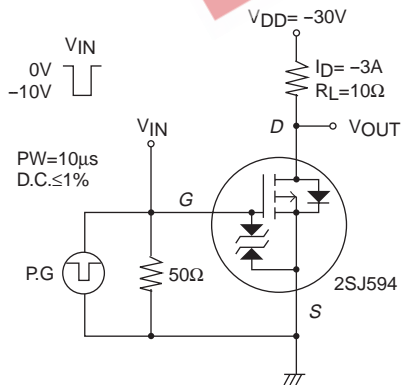
Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		-60	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		-5	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-20	A
Allowable Power Dissipation	P <sub>D</sub>		1	W
		Tc=25°C	15	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

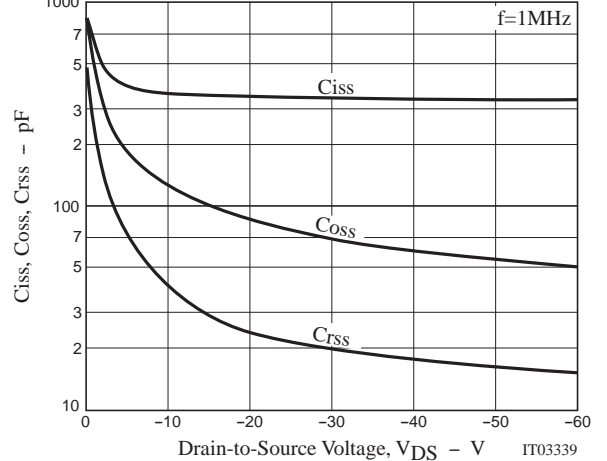
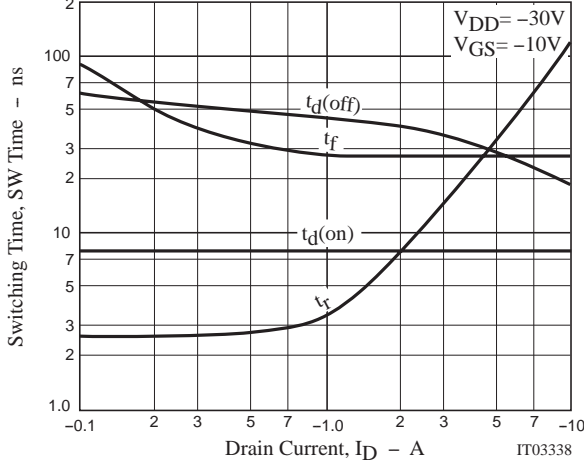
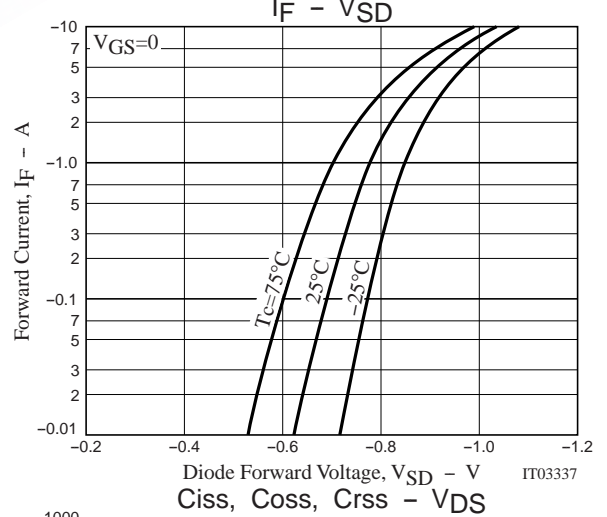
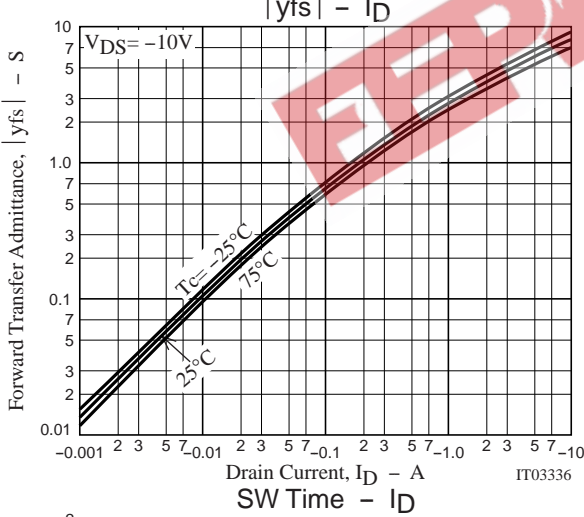
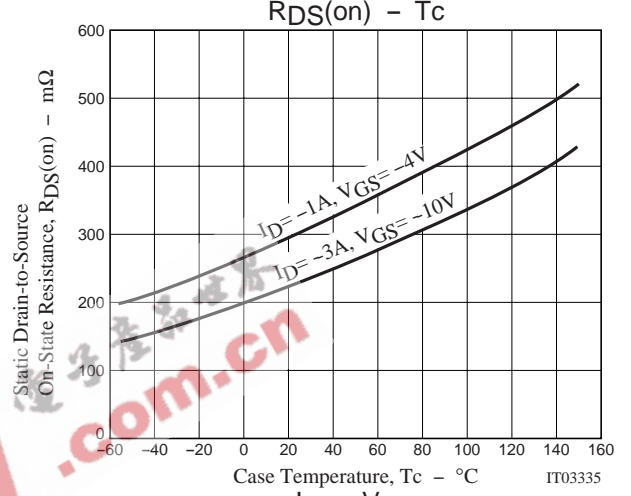
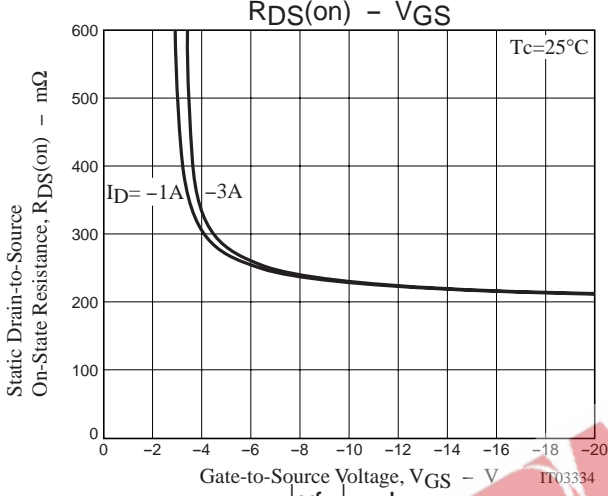
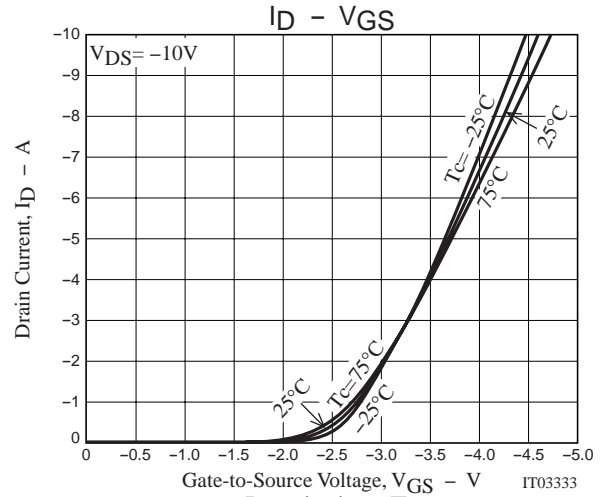
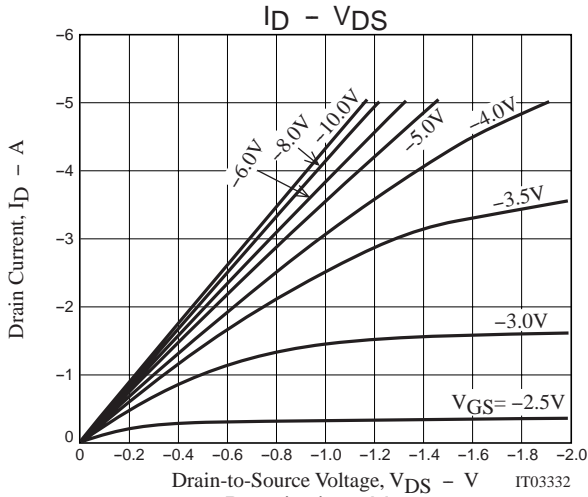
### Electrical Characteristics at Ta=25°C

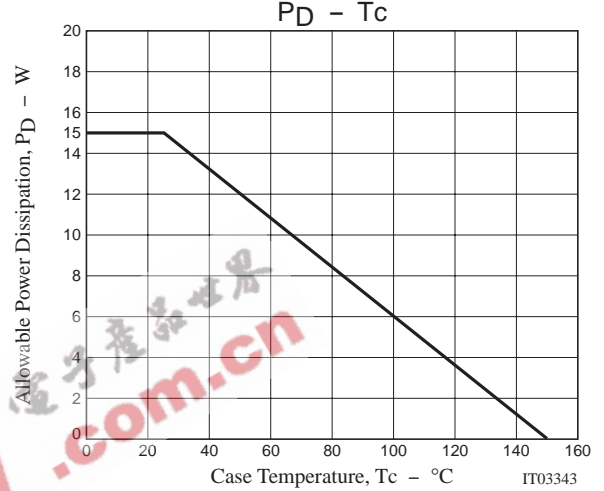
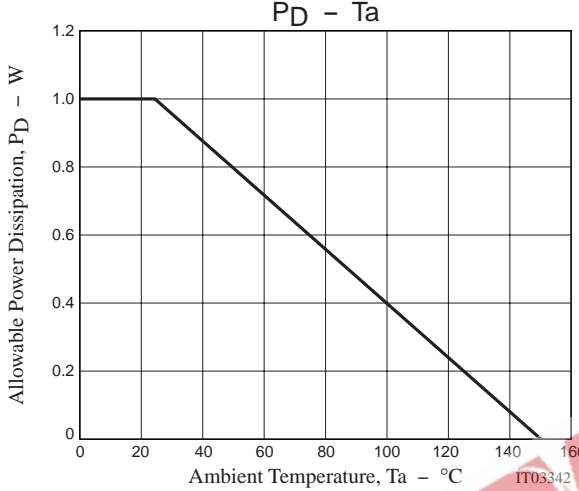
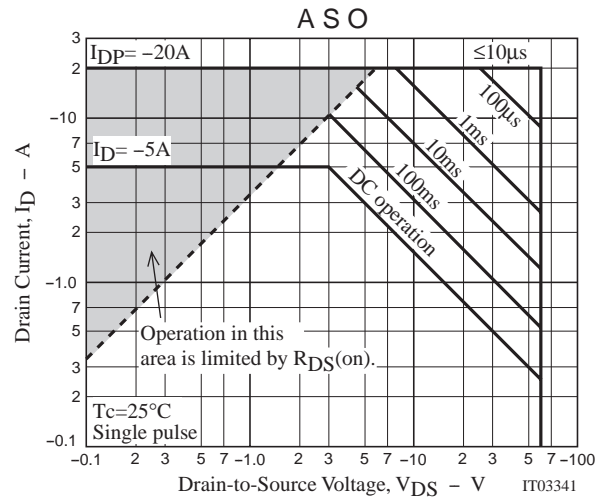
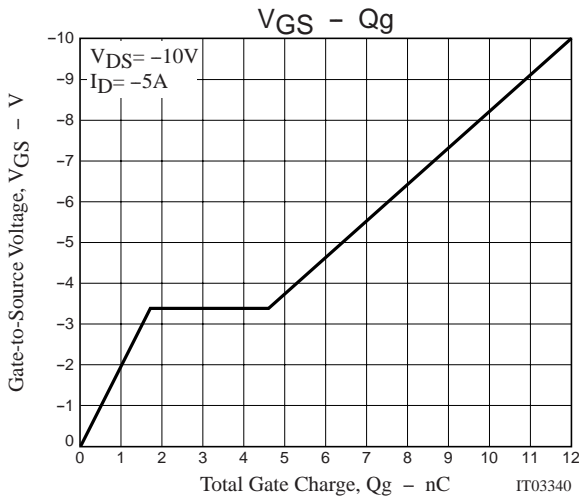
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =-1mA, V <sub>GS</sub> =0	-60			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-60V, V <sub>GS</sub> =0			-10	μA
Gate-to-Source Leakage Current	I <sub>GSS</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> =-3A	3.2	4.5		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-3A, V <sub>GS</sub> =-10V		225	295	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-1A, V <sub>GS</sub> =-4V		305	425	mΩ
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-20V, f=1MHz		350		pF
Output Capacitance	C <sub>oss</sub>	V <sub>DS</sub> =-20V, f=1MHz		90		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =-20V, f=1MHz		25		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit		8		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit		15		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit		37		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit		28		ns
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-5A		12		nC
Gate-to-Source Charge	Q <sub>gs</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-5A		1.7		nC
Gate-to-Drain "Miller" Charge	Q <sub>gd</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-5A		2.9		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-5A, V <sub>GS</sub> =0		-0.9	-1.2	V

Marking : J594

### Switching Time Test Circuit







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