



# 2SJ459

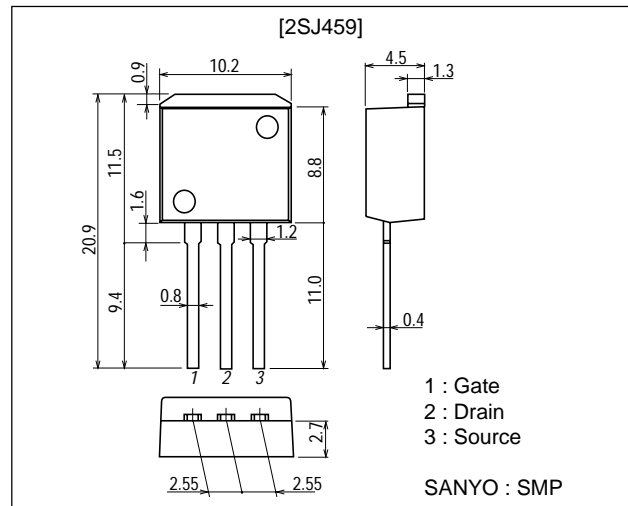
## Ultrahigh-Speed Switching Applications

### Features

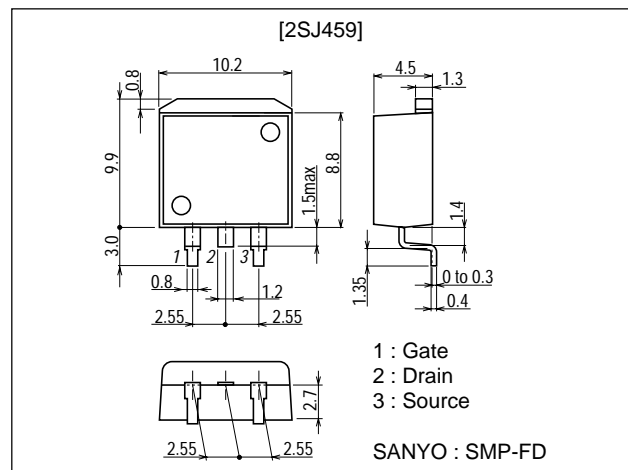
- High-speed diode incorporated.

### Package Dimensions

unit : mm  
2093A



unit : mm  
2090A



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# 2SJ459

## Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		-450	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±30	V
Drain Current (DC)	I <sub>D</sub>		-4	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-16	A
Allowable Power Dissipation	P <sub>D</sub>		1.65	W
		T <sub>c</sub> =25°C	70	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

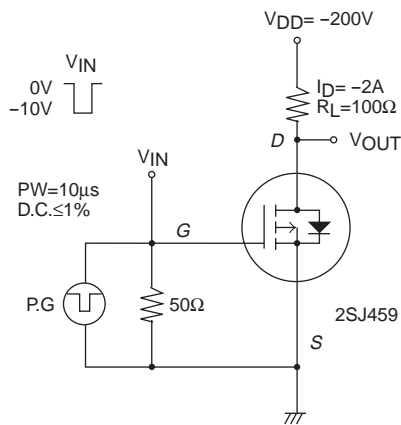
### Electrical Characteristics at Ta=25°C

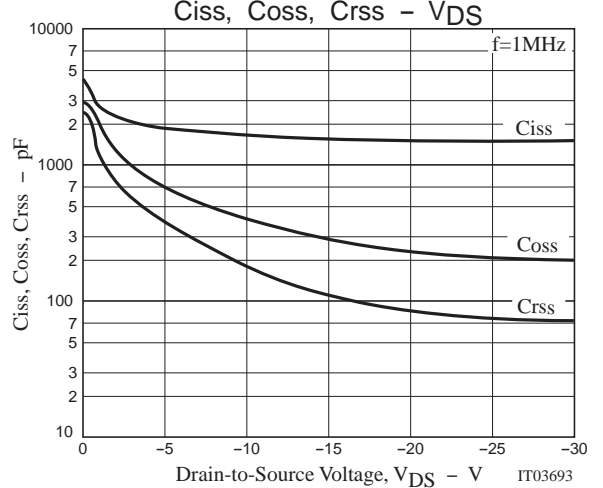
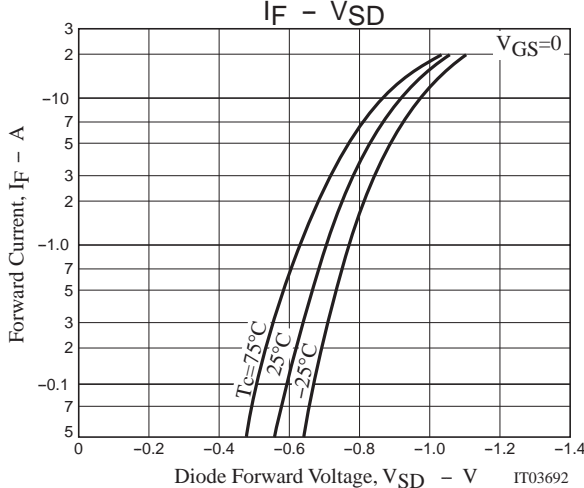
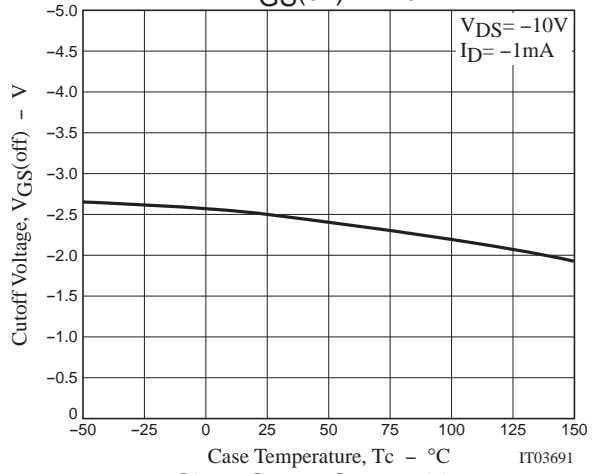
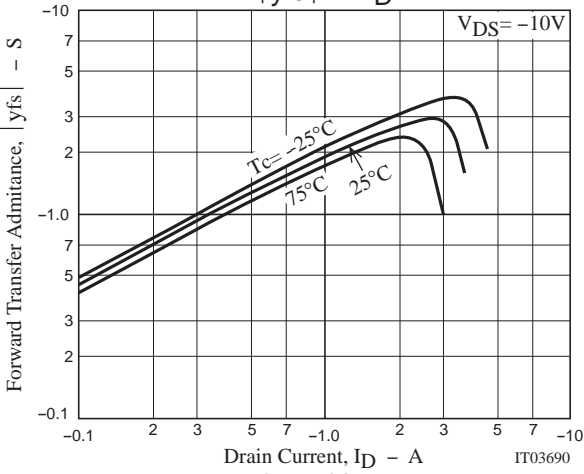
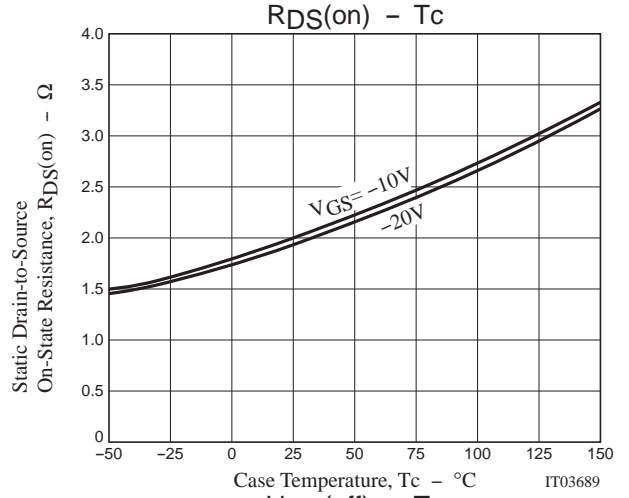
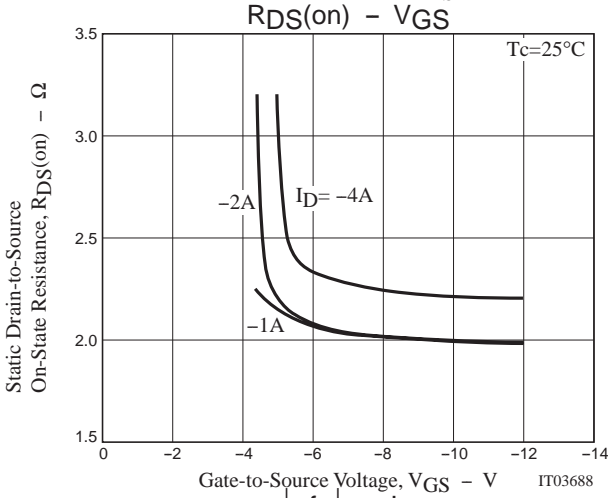
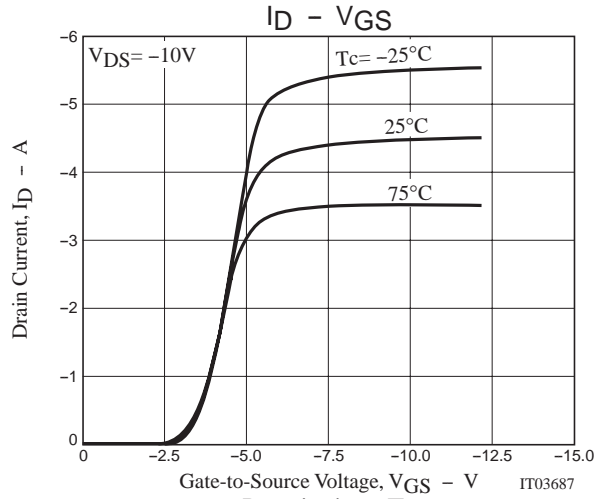
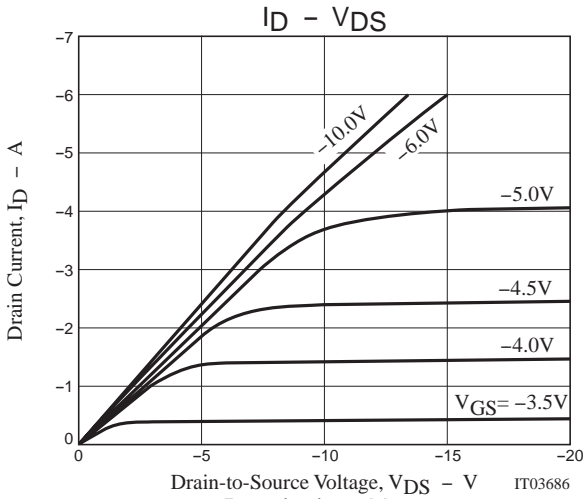
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =-10mA, V <sub>GS</sub> =0	-450			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-360V, V <sub>GS</sub> =0			-1.0	mA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±30V, V <sub>DS</sub> =0			±100	nA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-1mA	-2.0		-3.0	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-2A	1.2	2.4		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)</sub>	I <sub>D</sub> =-2A, V <sub>GS</sub> =-10V		2.0	2.8	Ω
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-20V, f=1MHz		1500		pF
Output Capacitance	C <sub>oss</sub>	V <sub>DS</sub> =-20V, f=1MHz		230		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =-20V, f=1MHz		80		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit.		35		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit.		50		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit.		300		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		80		ns
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-4A, V <sub>GS</sub> =0			-1.5	V
Diode Reverse Recovery Time	t <sub>rr</sub>	I <sub>S</sub> =-4A, di / dt=100A / μs	150	195		ns

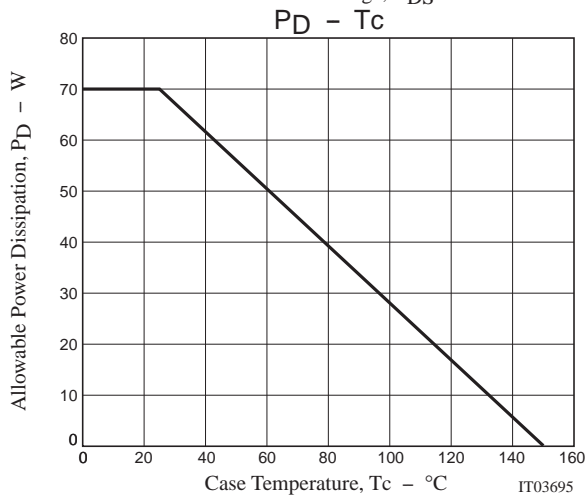
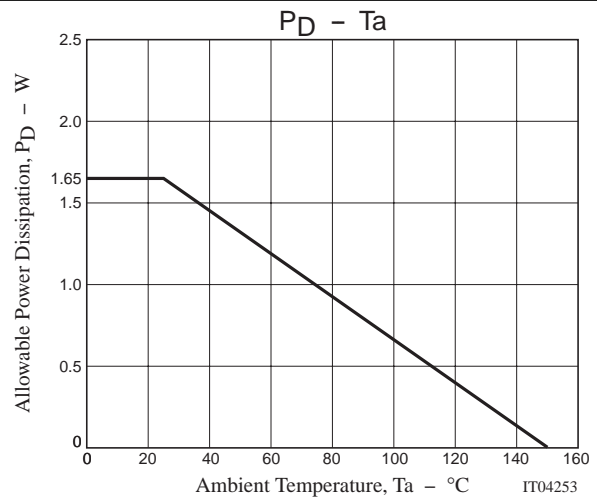
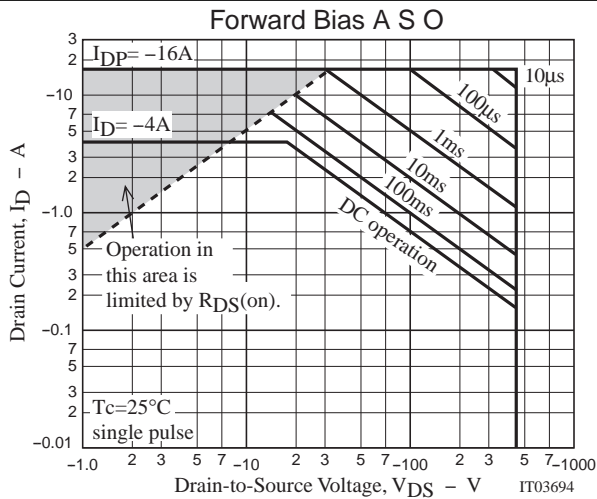
Marking : J459

\*(Note) Care must be taken in handling the 2SJ459 because no protection diode is provided between gate and source.

### Switching Time Test Circuit







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