

Ordering number : ENN5423A

P-Channel Silicon MOSFET



2SJ459

Ultrahigh-Speed Switching Applications

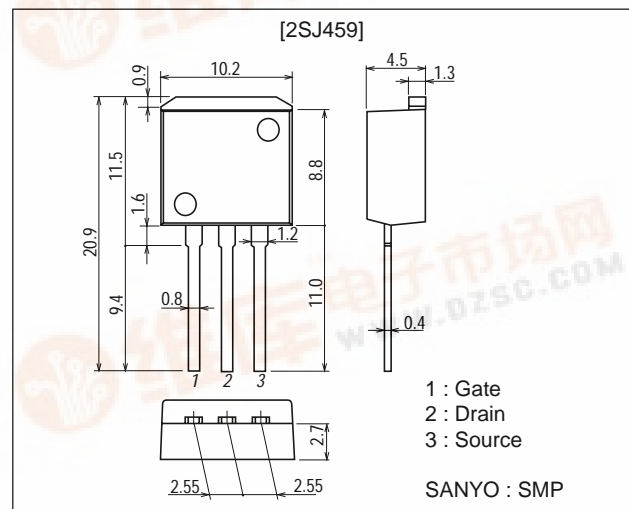
Features

- High-speed diode incorporated.

Package Dimensions

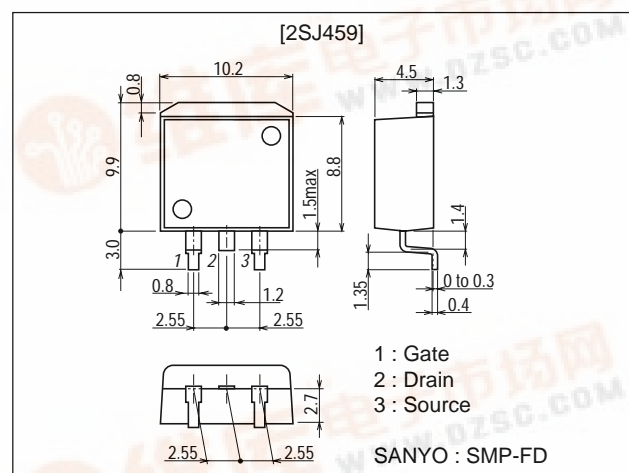
unit : mm

2093A



unit : mm

2090A



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Specifications

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		-450	V
Gate-to-Source Voltage	V_{GSS}		± 30	V
Drain Current (DC)	I_D		-4	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	-16	A
Allowable Power Dissipation	P_D		1.65	W
		$T_c=25^\circ\text{C}$	70	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

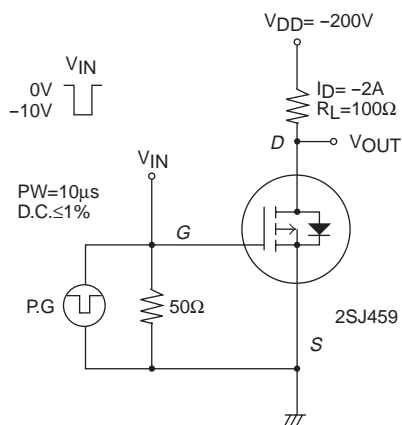
Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=-10\text{mA}$, $V_{GS}=0$	-450			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-360\text{V}$, $V_{GS}=0$			-1.0	mA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 30\text{V}$, $V_{DS}=0$			± 100	nA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=-10\text{V}$, $I_D=-1\text{mA}$	-2.0		-3.0	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=-10\text{V}$, $I_D=-2\text{A}$	1.2	2.4		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)}$	$I_D=-2\text{A}$, $V_{GS}=-10\text{V}$		2.0	2.8	Ω
Input Capacitance	C_{iss}	$V_{DS}=-20\text{V}$, $f=1\text{MHz}$		1500		pF
Output Capacitance	C_{oss}	$V_{DS}=-20\text{V}$, $f=1\text{MHz}$		230		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=-20\text{V}$, $f=1\text{MHz}$		80		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		35		ns
Rise Time	t_r	See specified Test Circuit.		50		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		300		ns
Fall Time	t_f	See specified Test Circuit.		80		ns
Diode Forward Voltage	V_{SD}	$I_S=-4\text{A}$, $V_{GS}=0$			-1.5	V
Diode Reverse Recovery Time	t_{rr}	$I_S=-4\text{A}$, $di/dt=100\text{A}/\mu\text{s}$		150	195	ns

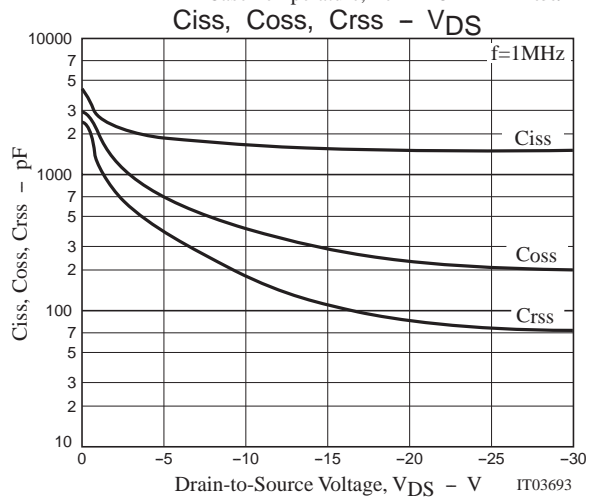
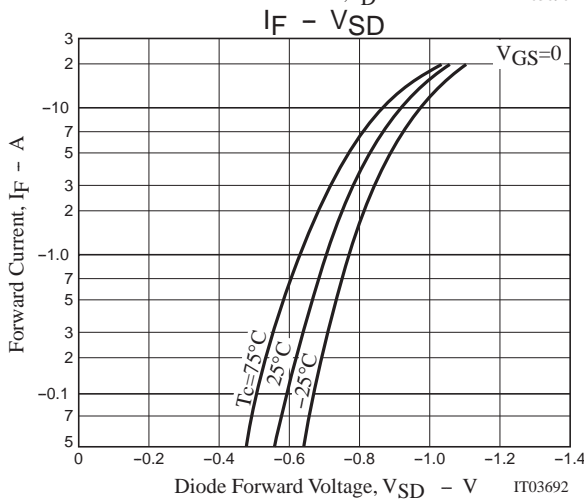
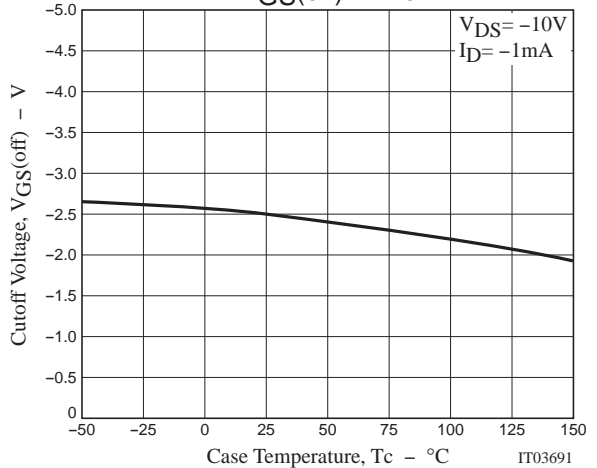
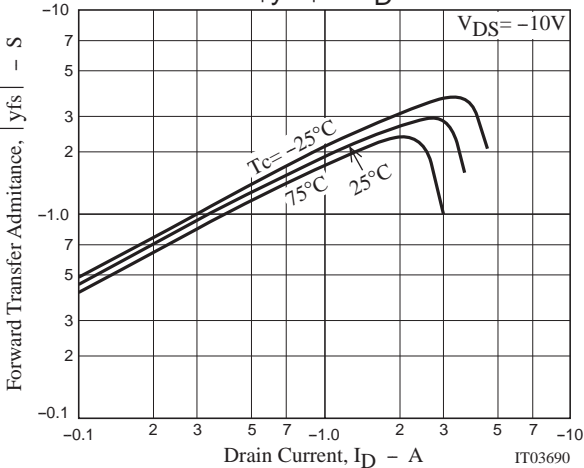
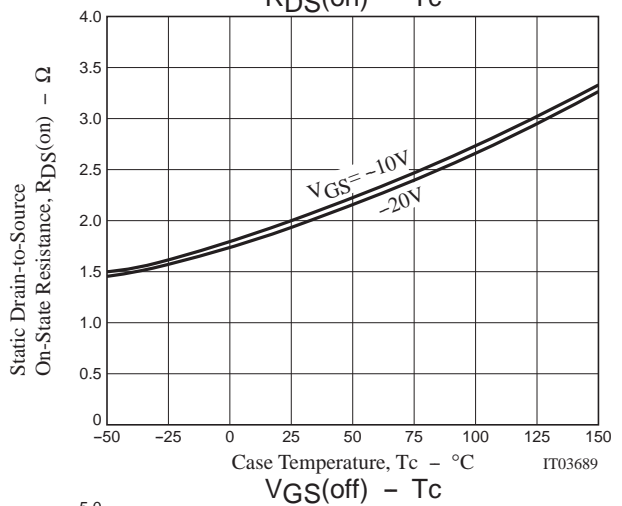
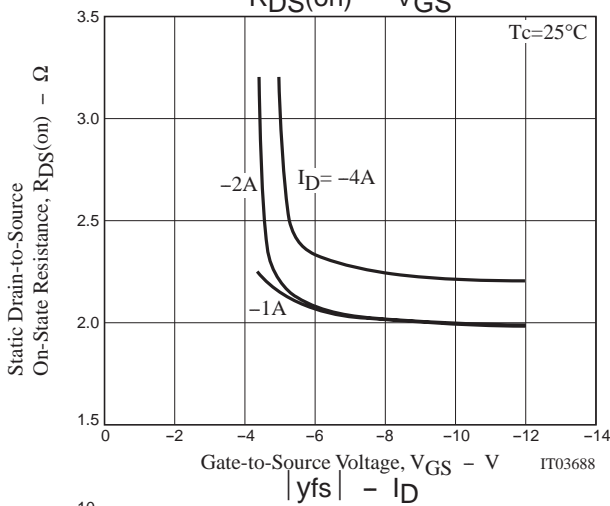
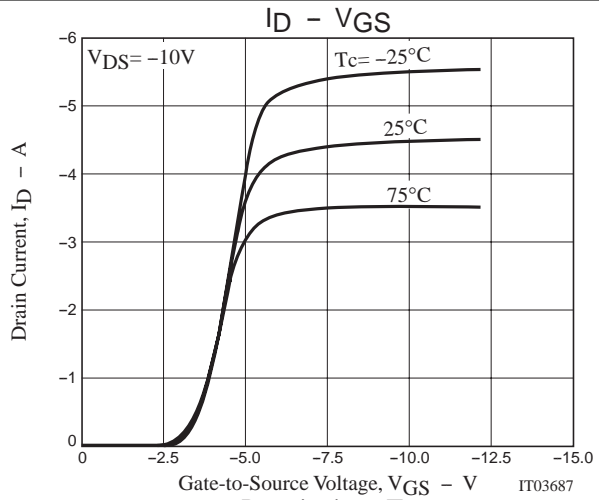
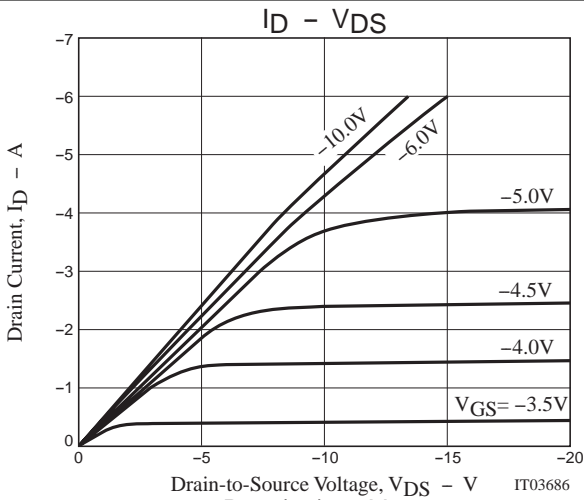
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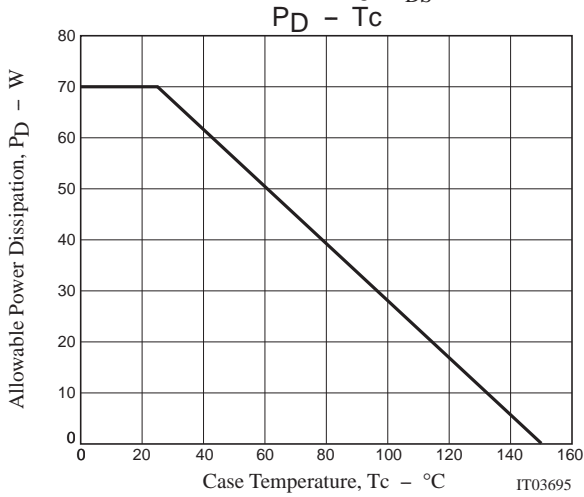
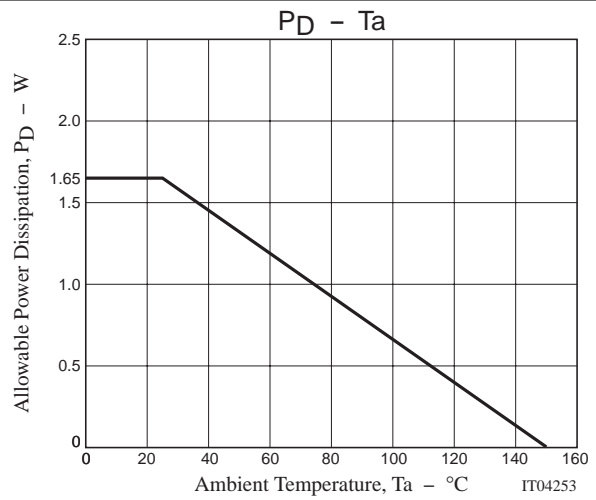
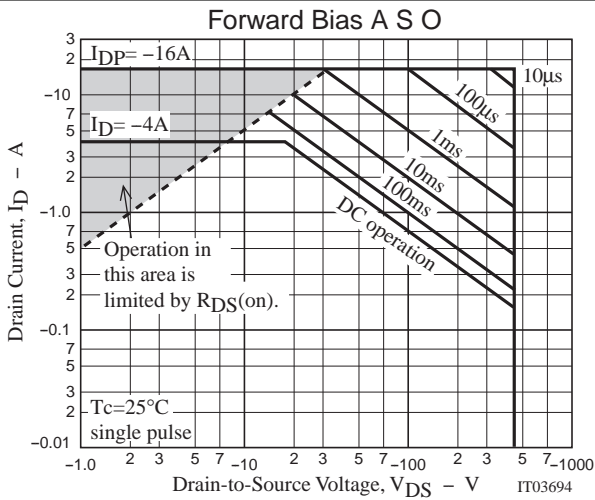
*(Note) Care must be taken in handling the 2SJ459 because no protection diode is provided between gate and source.

Switching Time Test Circuit



2SJ459





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