

Ordering number : ENN6979

P-Channel Silicon MOSFET



2SJ596

### DC / DC Converter Applications

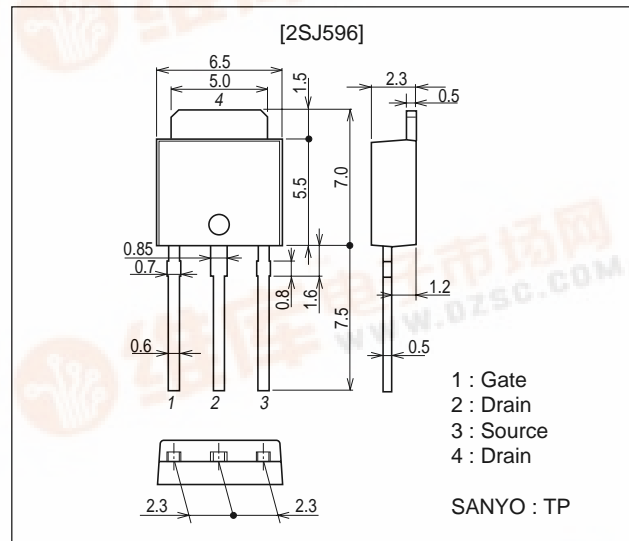
#### Features

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

#### Package Dimensions

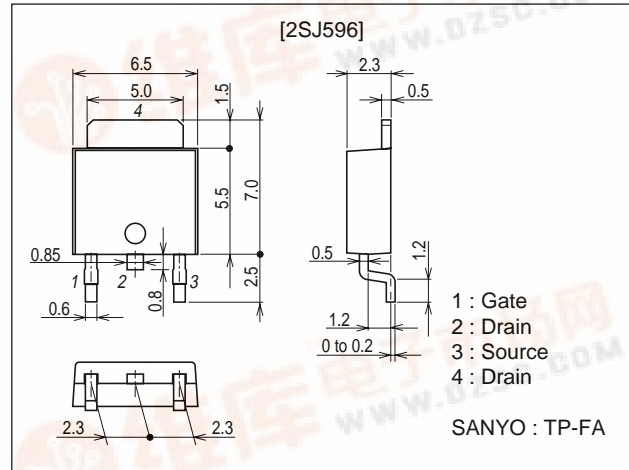
unit : mm

2083B



unit : mm

2092B



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## 2SJ596

### Specifications

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

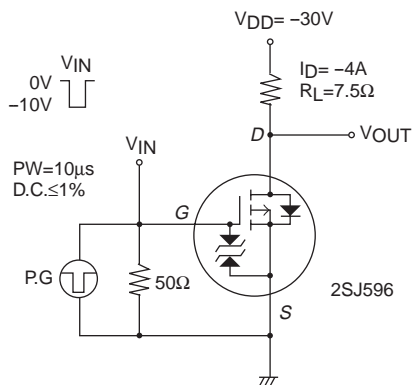
Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		-60	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		-8	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu\text{s}$ , duty cycle $\leq 1\%$	-32	A
Allowable Power Dissipation	$P_D$		1	W
		$T_c=25^\circ\text{C}$	20	W
Channel Temperature	$T_{ch}$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

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

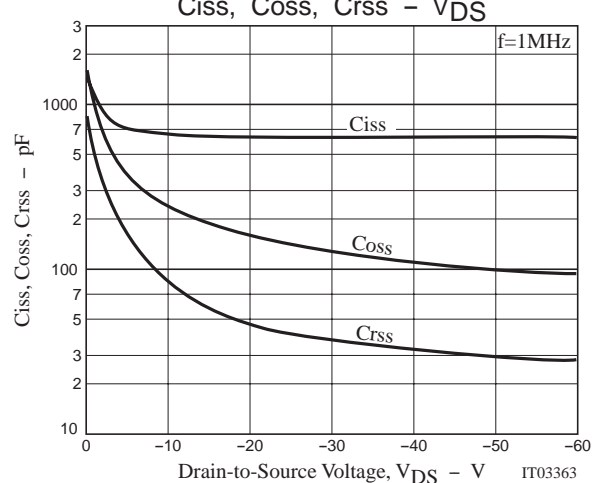
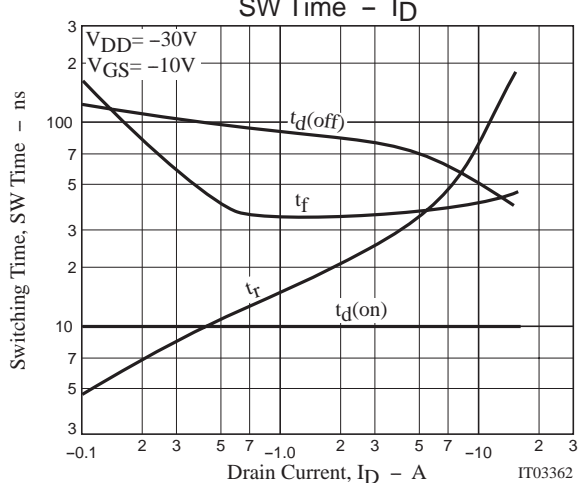
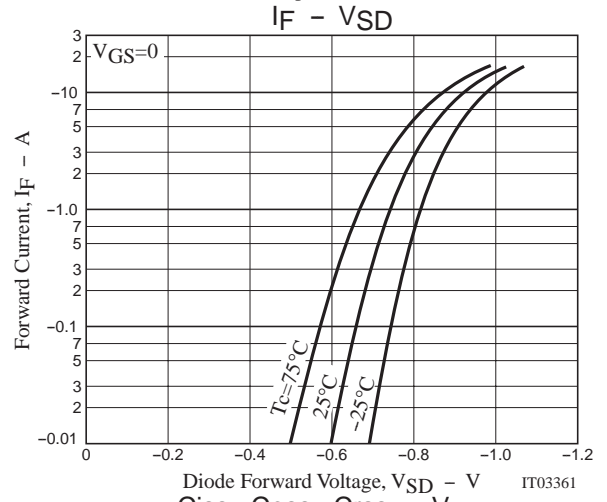
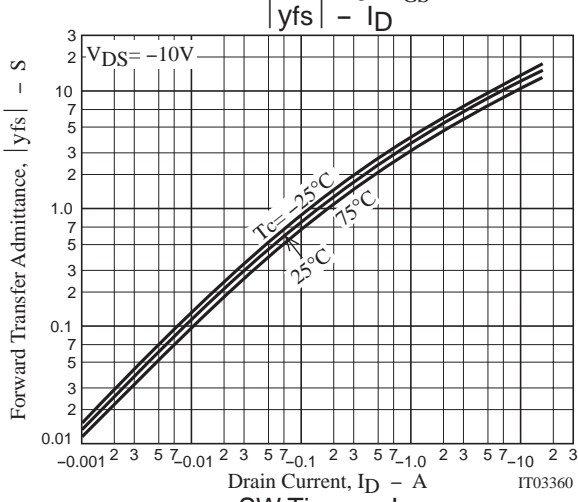
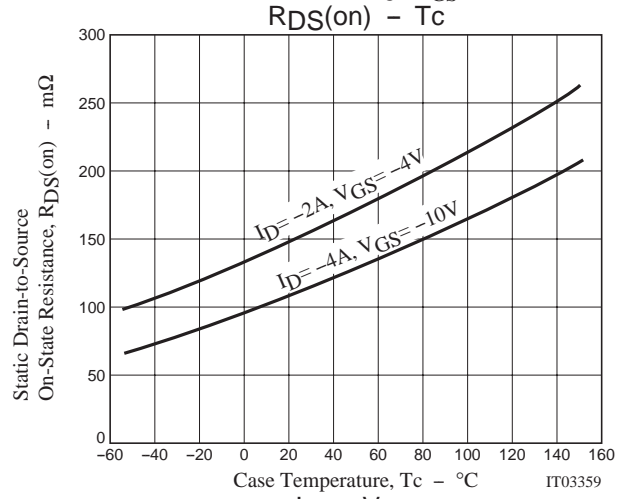
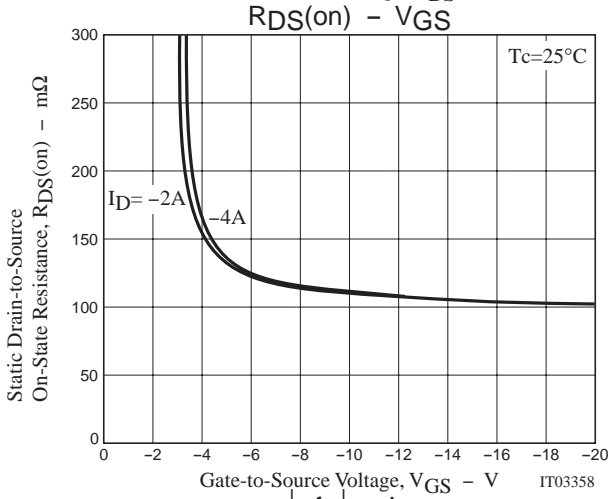
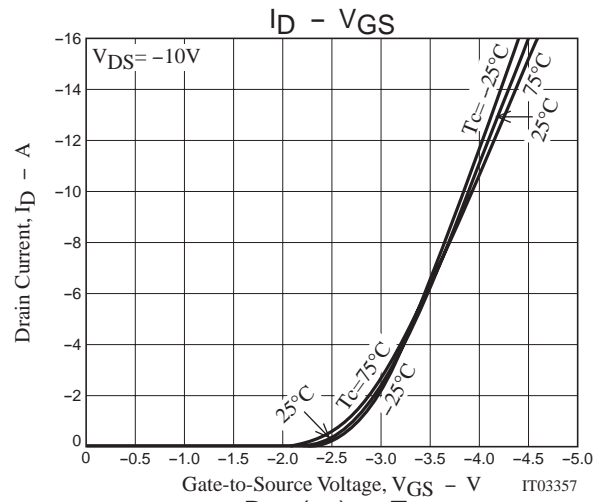
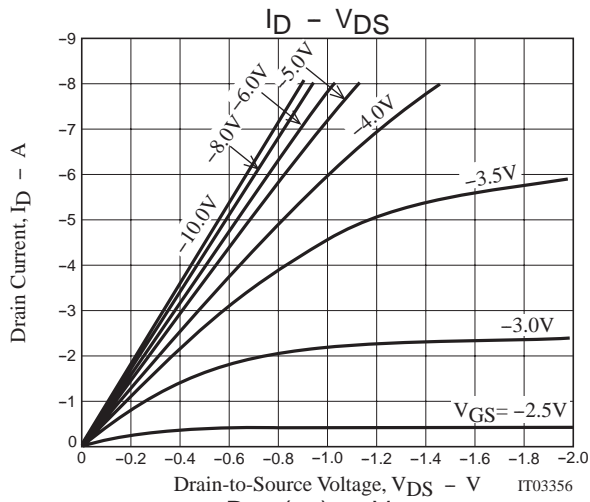
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=-1\text{mA}$ , $V_{GS}=0$	-60			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-60\text{V}$ , $V_{GS}=0$			-10	$\mu\text{A}$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 16\text{V}$ , $V_{DS}=0$			$\pm 10$	$\mu\text{A}$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=-10\text{V}$ , $I_D=-1\text{mA}$	-1.0		-2.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=-10\text{V}$ , $I_D=-4\text{A}$	5	7		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=-4\text{A}$ , $V_{GS}=-10\text{V}$		110	145	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D=-2\text{A}$ , $V_{GS}=-4\text{V}$		155	220	$\text{m}\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=-20\text{V}$ , $f=1\text{MHz}$		680		pF
Output Capacitance	$C_{oss}$	$V_{DS}=-20\text{V}$ , $f=1\text{MHz}$		170		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=-20\text{V}$ , $f=1\text{MHz}$		50		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		10		ns
Rise Time	$t_r$	See specified Test Circuit		30		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		75		ns
Fall Time	$t_f$	See specified Test Circuit		35		ns
Total Gate Charge	$Q_g$	$V_{DS}=-10\text{V}$ , $V_{GS}=-10\text{V}$ , $I_D=-8\text{A}$		22		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS}=-10\text{V}$ , $V_{GS}=-10\text{V}$ , $I_D=-8\text{A}$		4		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS}=-10\text{V}$ , $V_{GS}=-10\text{V}$ , $I_D=-8\text{A}$		5		nC
Diode Forward Voltage	$V_{SD}$	$I_S=-8\text{A}$ , $V_{GS}=0$	-0.9	-1.2		V

Marking : J596

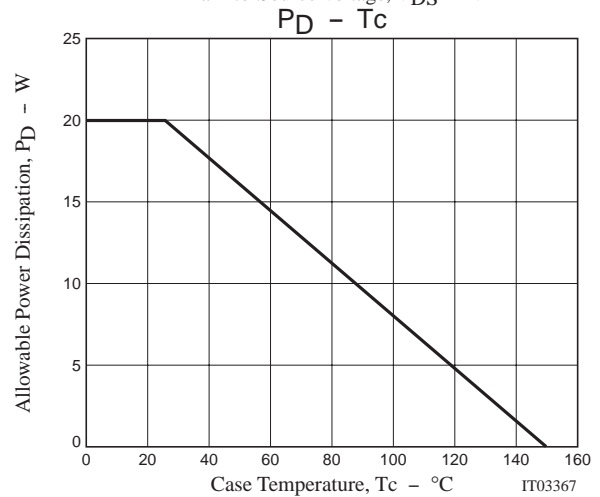
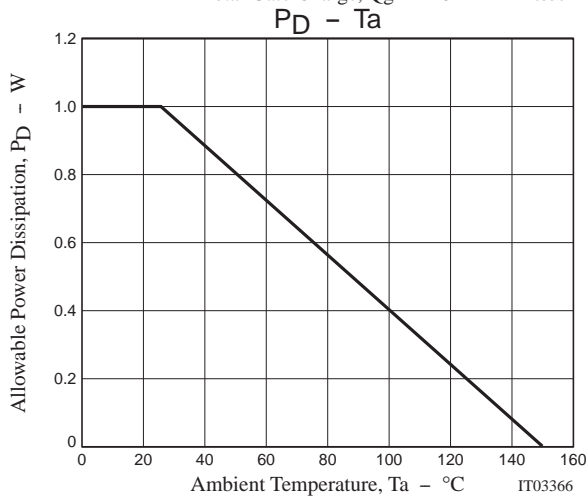
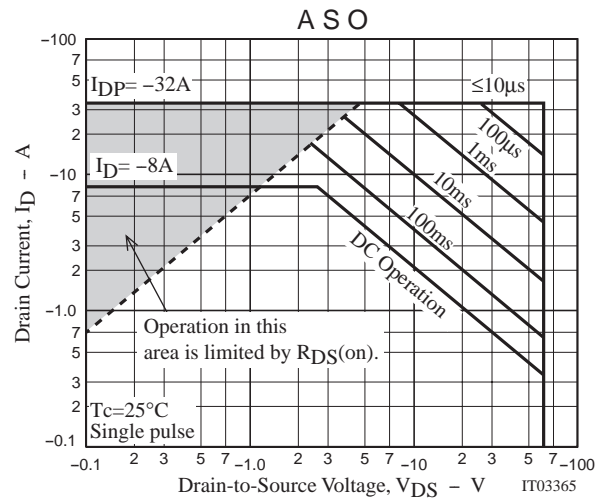
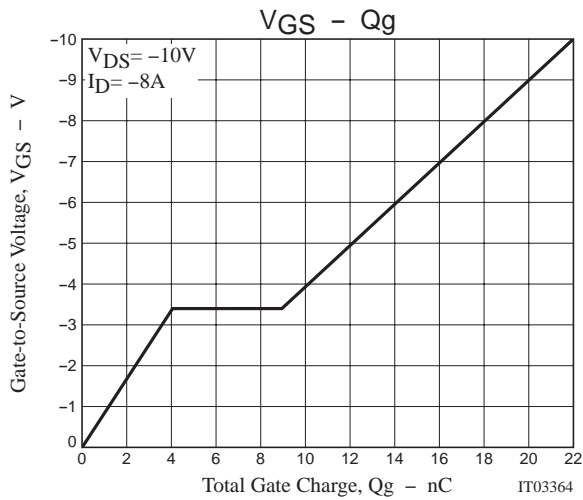
### Switching Time Test Circuit



# 2SJ596



## 2SJ596



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