



2SK3280

DC/DC Converter Applications

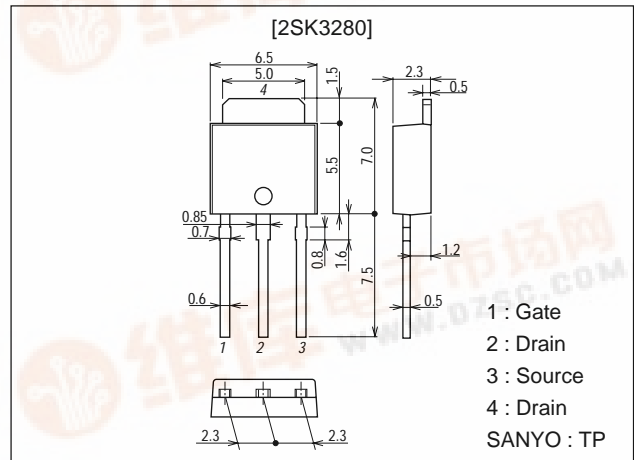
Features

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

Package Dimensions

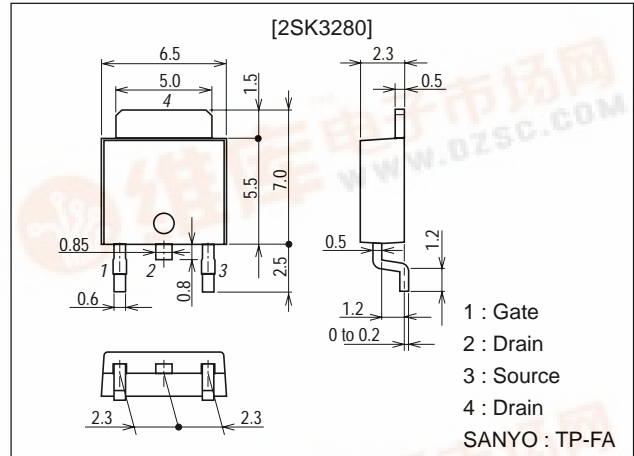
unit:mm

2083B



unit:mm

2092B



■ Any and all SANYO products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your SANYO representative nearest you before using any SANYO products described or contained herein in such applications.

■ SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all SANYO products described or contained herein.



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Specifications

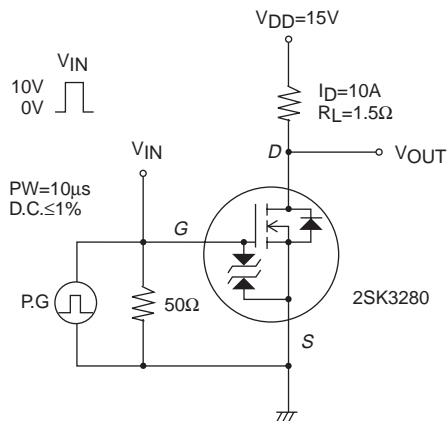
Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		30	V
Gate-to-Source Voltage	V_{GSS}		± 20	V
Drain Current (DC)	I_D		20	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	45	A
Allowable Power Dissipation	P_D		1	W
		$T_c = 25^\circ\text{C}$	30	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

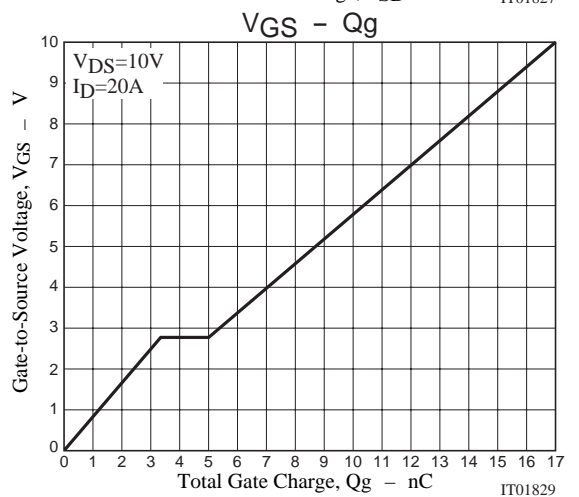
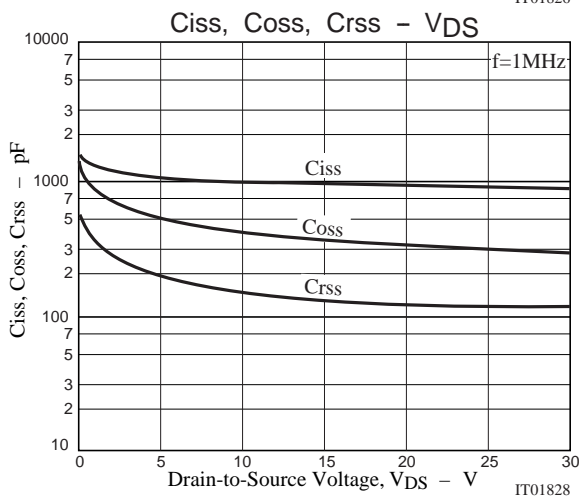
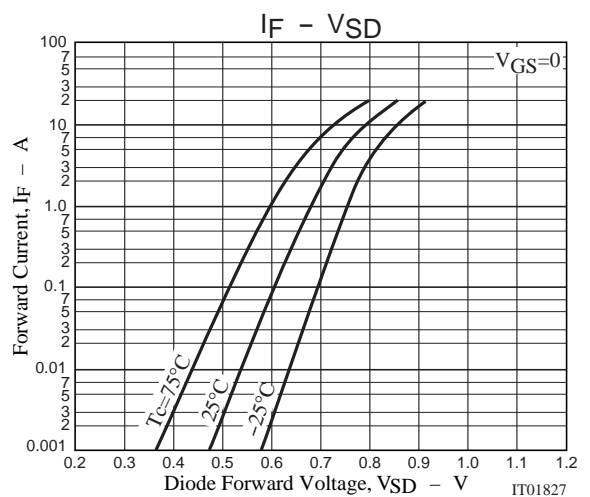
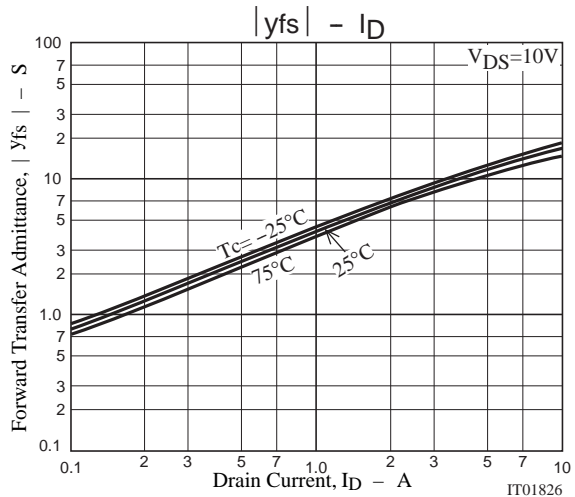
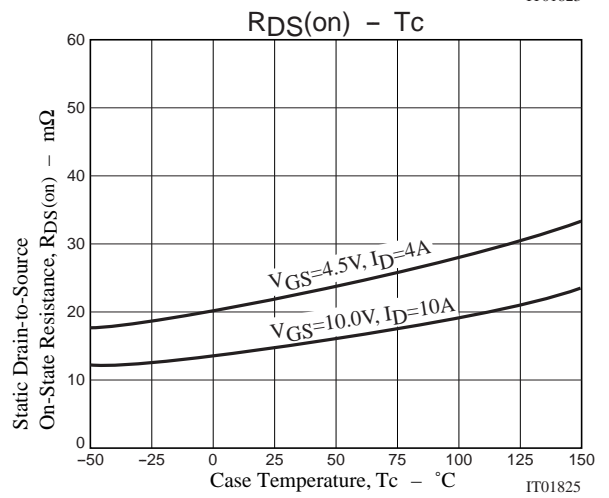
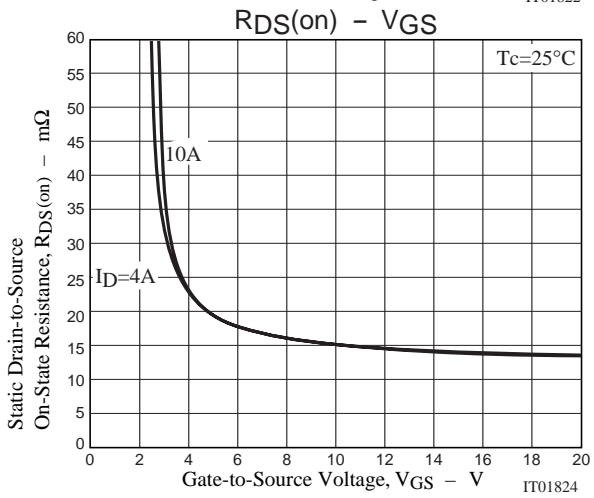
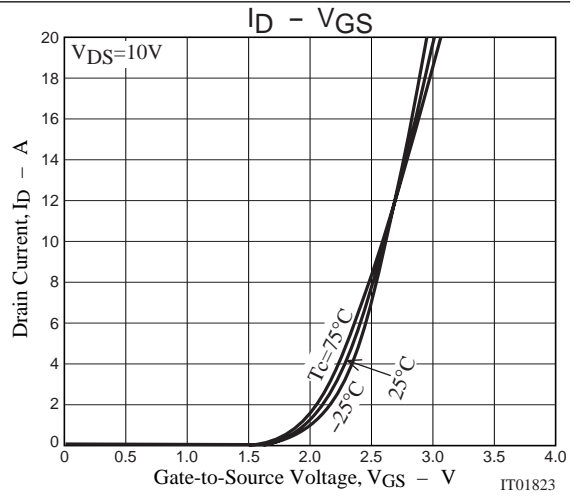
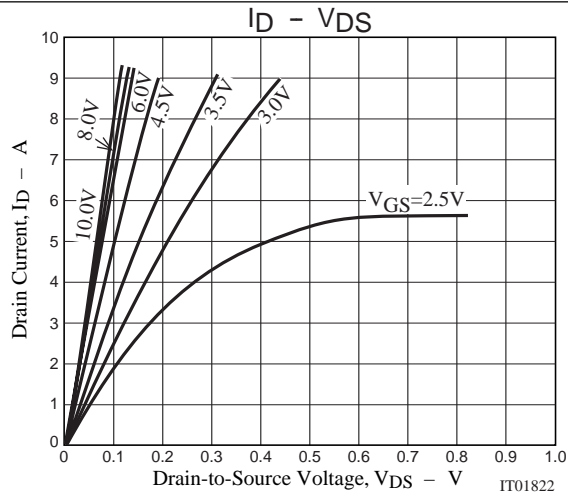
Electrical Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 1\text{mA}$, $V_{GS} = 0$	30			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 30\text{V}$, $V_{GS} = 0$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 16\text{V}$, $V_{DS} = 0$			± 10	μA
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} $	$V_{DS} = 10\text{V}$, $I_D = 10\text{A}$	12	18		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = 10\text{A}$, $V_{GS} = 10\text{V}$		15	20	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D = 10\text{A}$, $V_{GS} = 4.5\text{V}$		22	31	$\text{m}\Omega$
Input Capacitance	C_{iss}	$V_{DS} = 10\text{V}$, $f = 1\text{MHz}$		1000		pF
Output Capacitance	C_{oss}	$V_{DS} = 10\text{V}$, $f = 1\text{MHz}$		410		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = 10\text{V}$, $f = 1\text{MHz}$		160		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		11		ns
Rise Time	t_r	See specified Test Circuit		210		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		80		ns
Fall Time	t_f	See specified Test Circuit		85		ns
Total Gate Charge	Q_g	$V_{DS} = 10\text{V}$, $V_{GS} = 10\text{V}$, $I_D = 20\text{A}$		17		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS} = 10\text{V}$, $V_{GS} = 10\text{V}$, $I_D = 20\text{A}$		3.3		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS} = 10\text{V}$, $V_{GS} = 10\text{V}$, $I_D = 20\text{A}$		1.7		nC
Diode Forward Voltage	V_{SD}	$I_S = 20\text{A}$, $V_{GS} = 0$		1.0	1.2	V

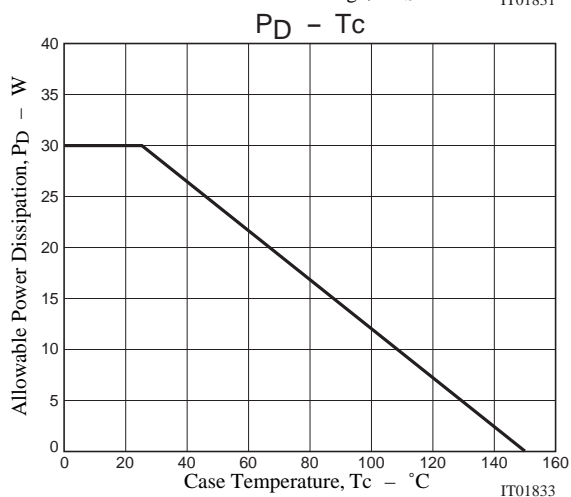
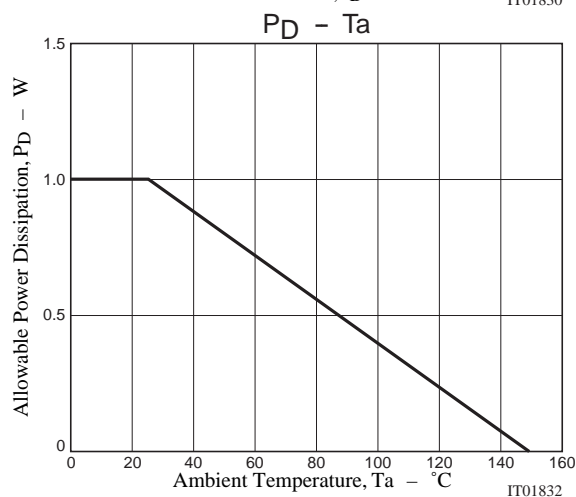
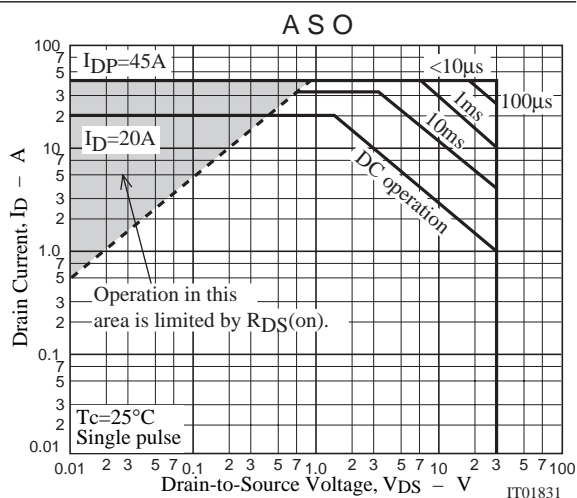
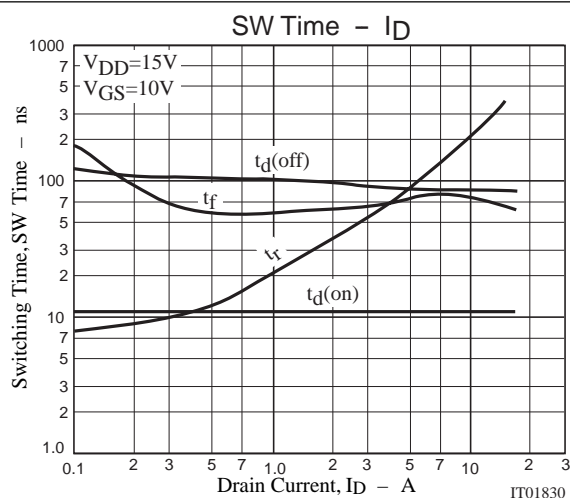
Switching Time Test Circuit



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