

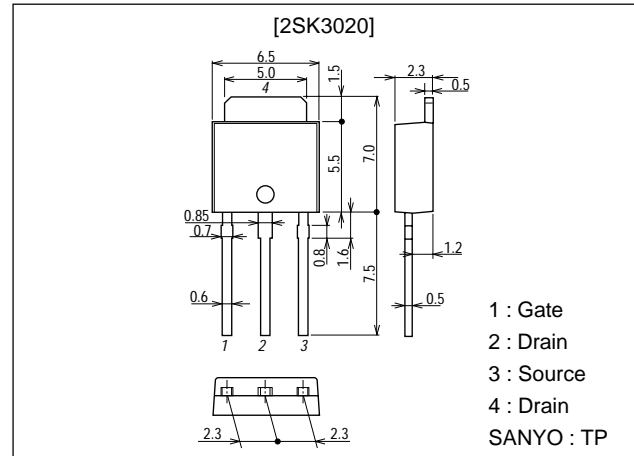
**2SK3020****DC/DC Converter Applications****Features**

- Low ON resistance.
- 4V drive.

**Package Dimensions**

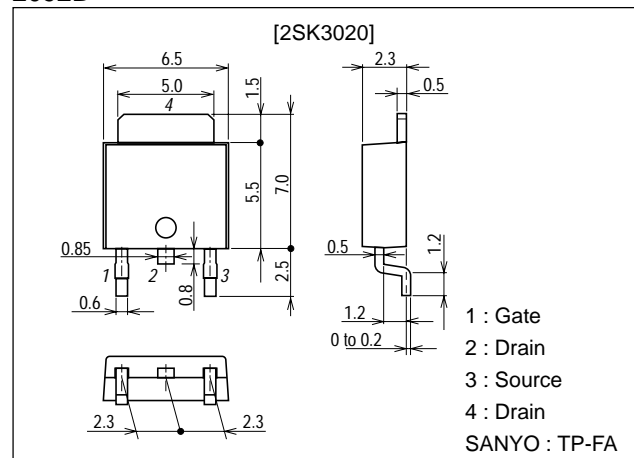
unit:mm

2083B



unit:mm

2092B



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# 2SK3020

## Specifications

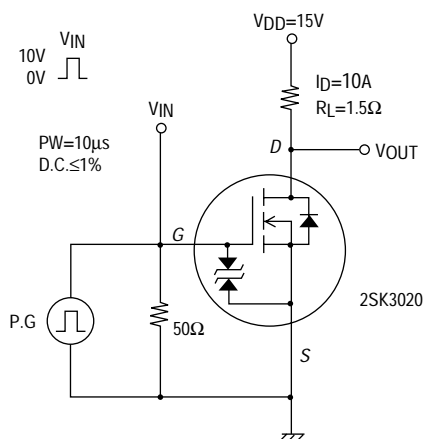
### Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		30	V
Gate-to-Source Voltage	$V_{GSS}$		±24	V
Drain Current (DC)	$I_D$		15	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	45	A
Allowable Power Dissipation	$P_D$		1.0	W
		$T_c = 25^\circ C$	20	W
Channel Temperature	$T_{ch}$		150	°C
Storage Temperature	$T_{stg}$		-55 to +150	°C

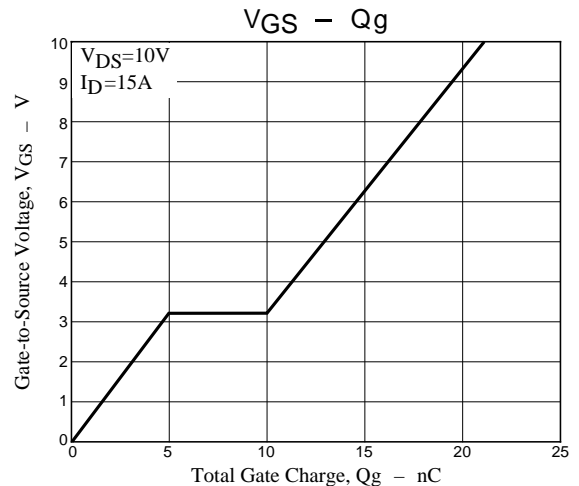
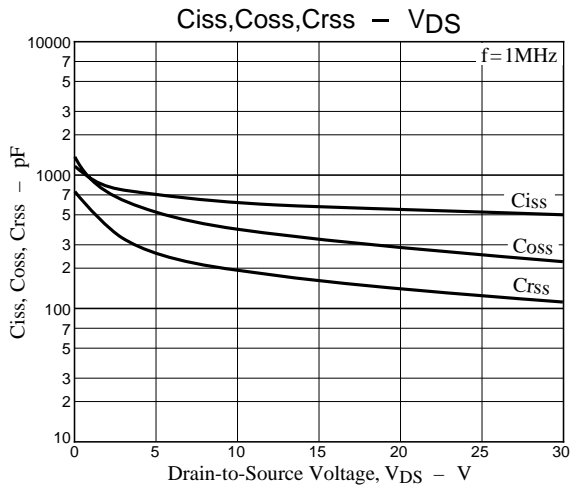
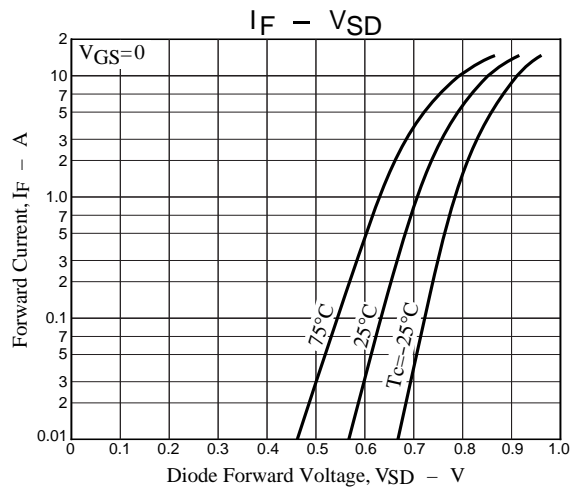
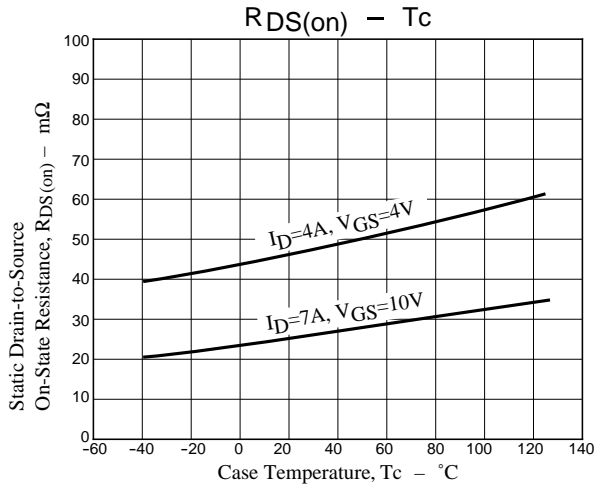
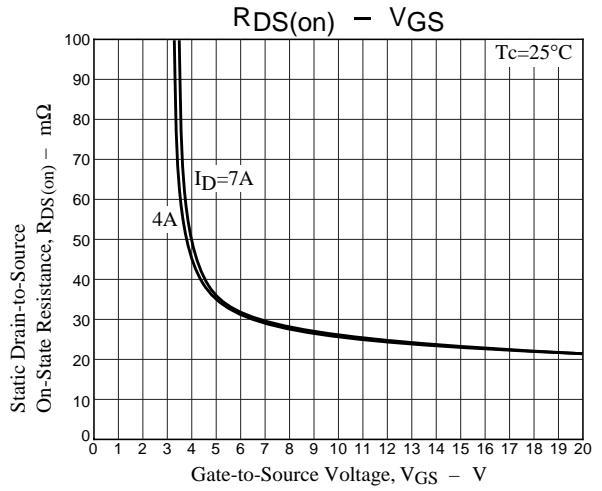
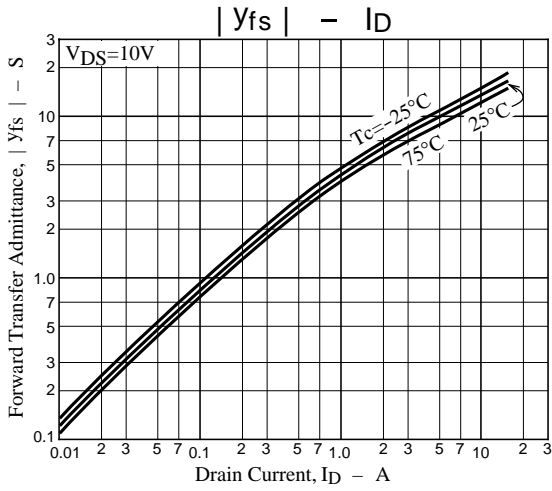
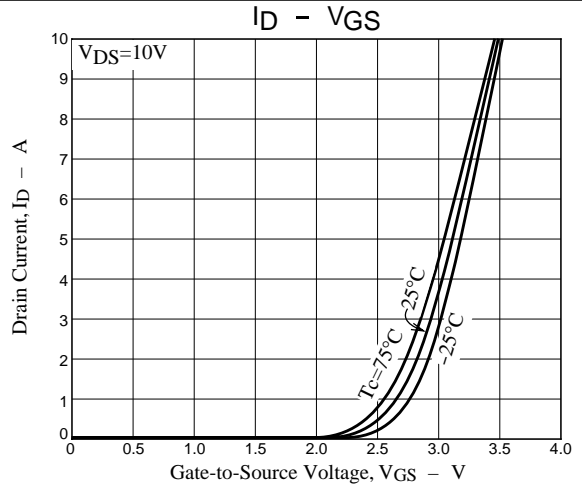
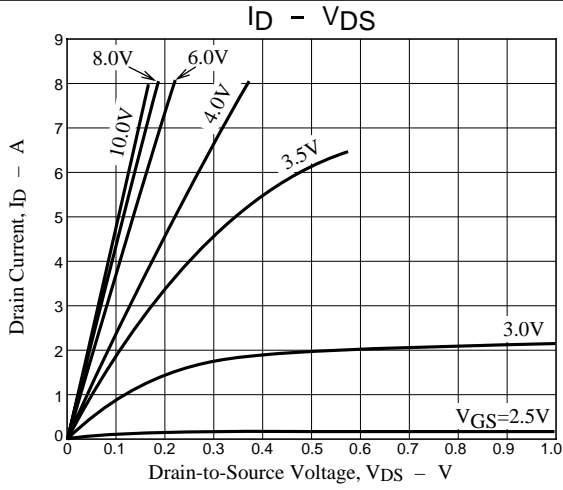
### Electrical Characteristics at Ta = 25°C

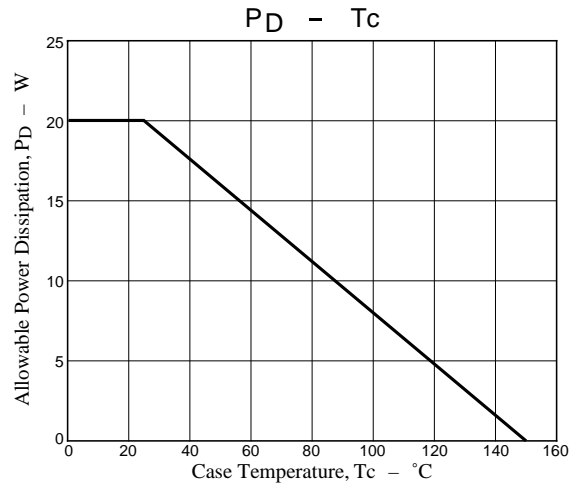
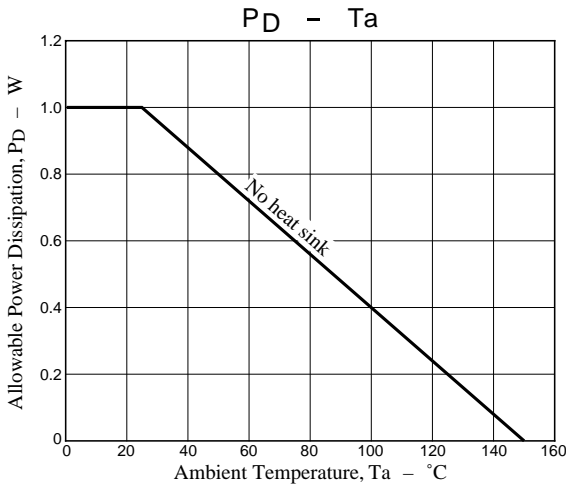
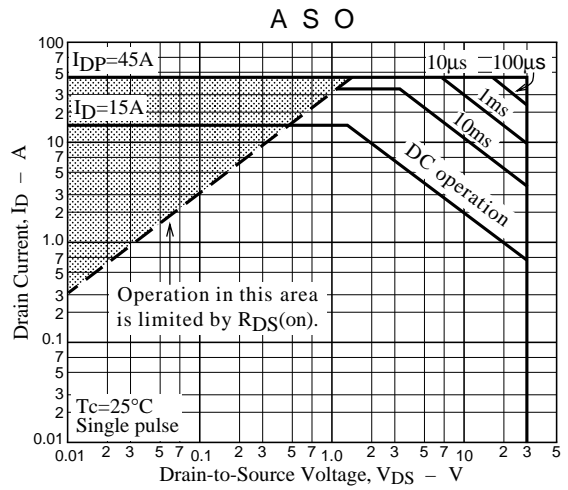
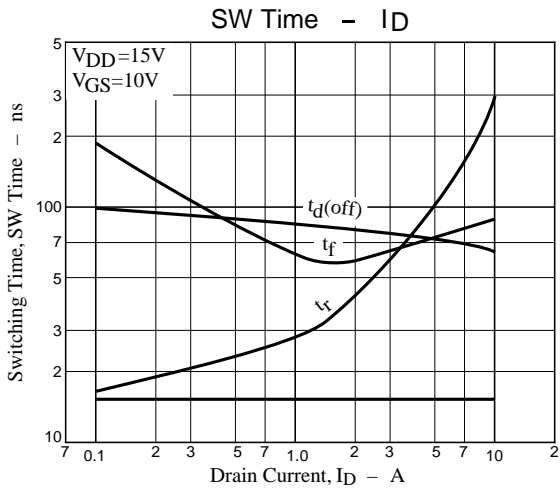
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 1mA$ , $V_{GS} = 0$	30			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 30V$ , $V_{GS} = 0$			10	μA
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 16V$ , $V_{DS} = 0$			±10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10V$ , $I_D = 1mA$	1.0		2.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 10V$ , $I_D = 10A$	10	14		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = 7A$ , $V_{GS} = 10V$		25	32	mΩ
	$R_{DS(on)2}$	$I_D = 4A$ , $V_{GS} = 4V$		48	67	mΩ
Input Capacitance	$C_{iss}$	$V_{DS} = 10V$ , $f = 1MHz$		640		pF
Output Capacitance	$C_{oss}$	$V_{DS} = 10V$ , $f = 1MHz$		380		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS} = 10V$ , $f = 1MHz$		180		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		15		ns
Rise Time	$t_r$	See specified Test Circuit		280		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		60		ns
Fall Time	$t_f$	See specified Test Circuit		90		ns
Total Gate Charge	$Q_g$	$V_{DS} = 10V$ , $V_{GS} = 10V$ , $I_D = 15A$		21		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS} = 10V$ , $V_{GS} = 10V$ , $I_D = 15A$		5		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS} = 10V$ , $V_{GS} = 10V$ , $I_D = 15A$		5		nC
Diode Forward Voltage	$V_{SD}$	$I_S = 15A$ , $V_{GS} = 0$		0.9	12	V

### Switching Time Test Circuit



# 2SK3020





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