



# 2SK3278

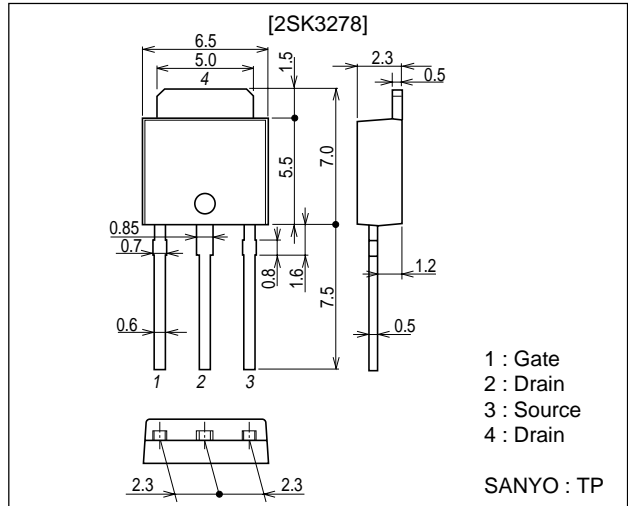
## DC/DC Converter Applications

### Features

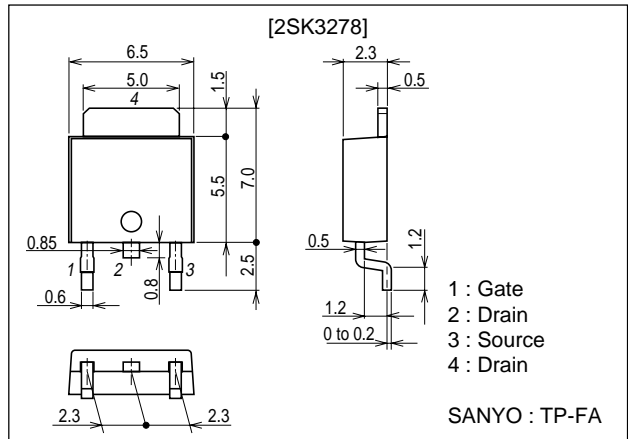
- Low ON-resistance.
- 4V drive.
- Ultrahigh-speed switching.

### Package Dimensions

unit : mm  
2083B



unit : mm  
2092B



### Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		30	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V

Continued on next page.

■ 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.

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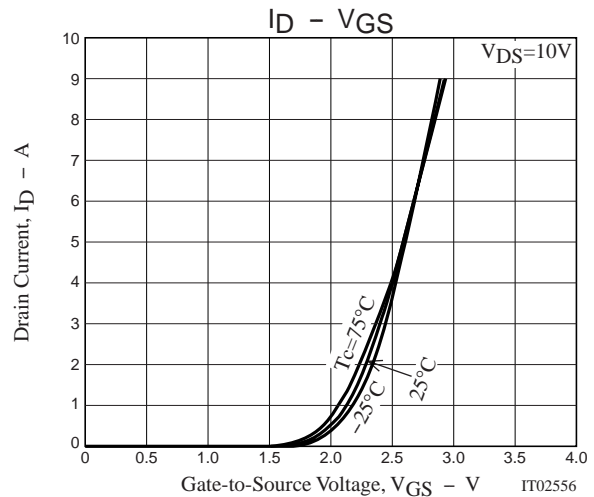
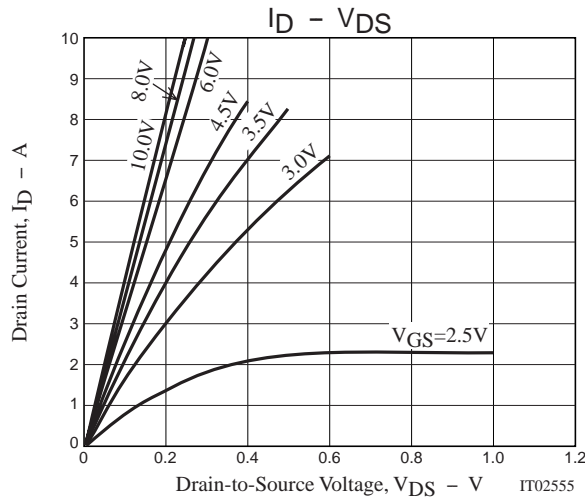
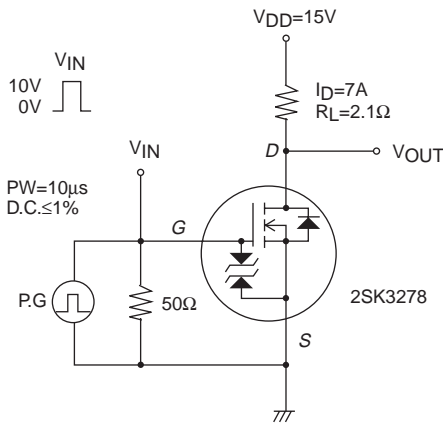
Parameter	Symbol	Conditions	Ratings	Unit
Drain Current (DC)	$I_D$		15	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	45	A
Allowable Power Dissipation	$P_D$	$T_c = 25^\circ C$	1	W
			15	W
Channel Temperature	$T_{ch}$		150	$^\circ C$
Storage Temperature	$T_{stg}$		-55 to +150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

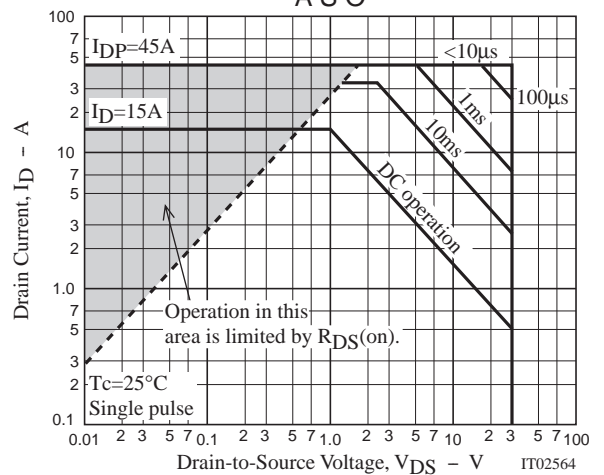
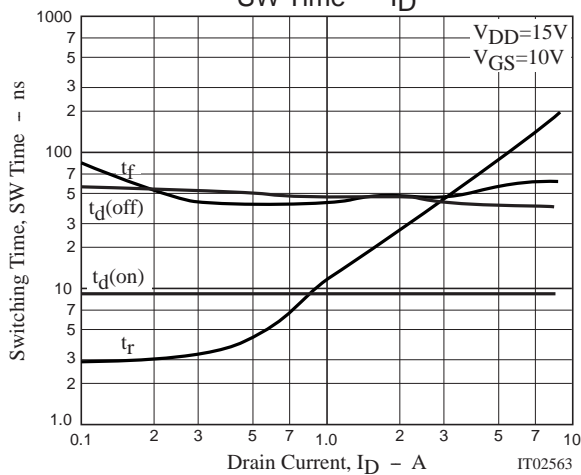
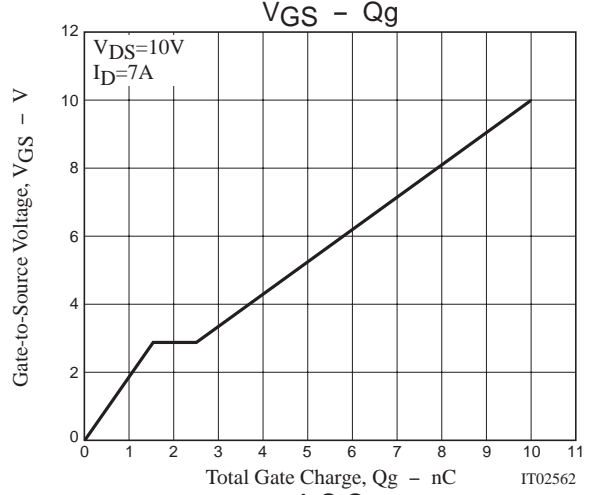
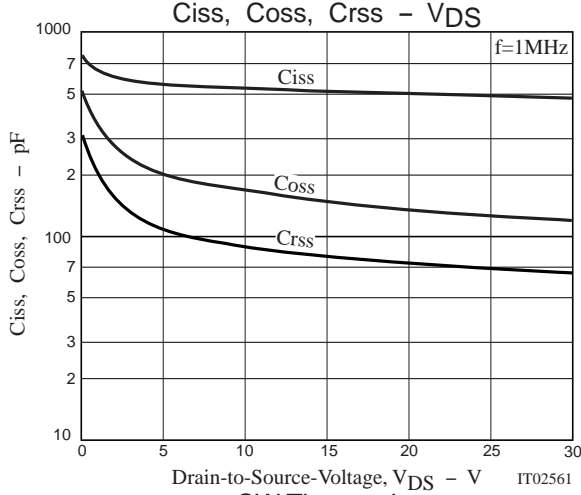
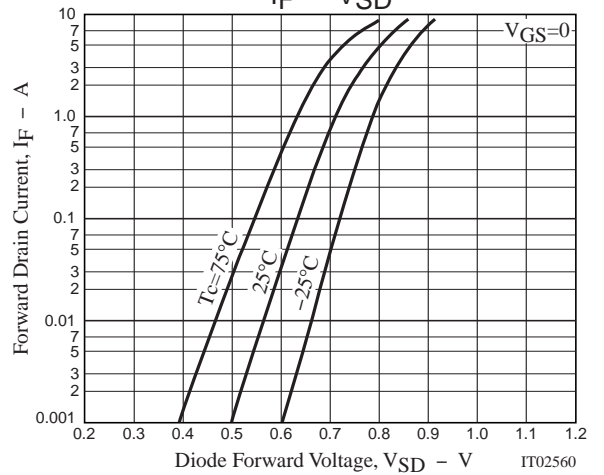
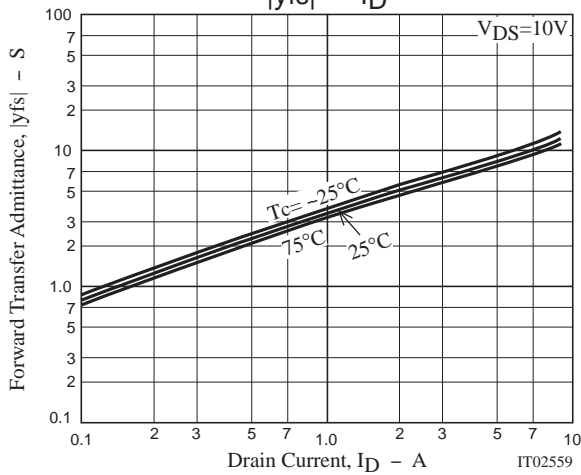
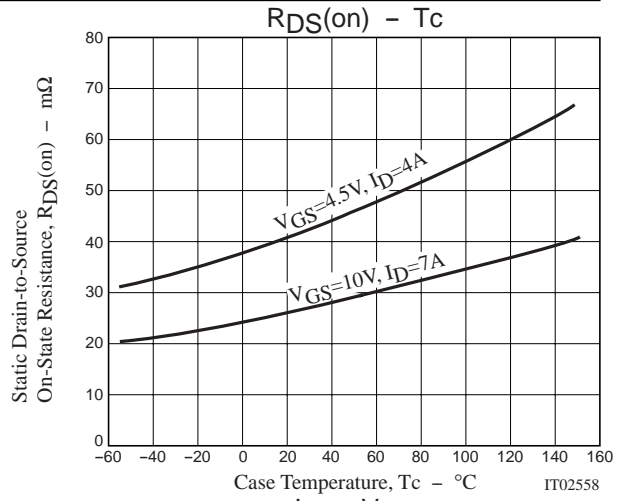
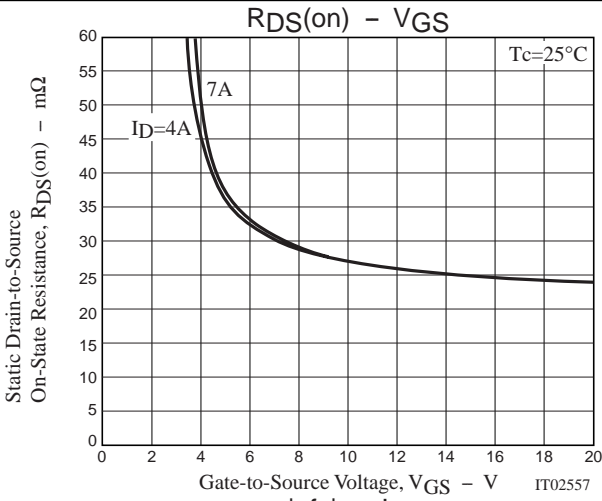
## Electrical Characteristics at $T_a = 25^\circ C$

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	$I_{DSS}$	$V_{DS} = 30V$ , $V_{GS} = 0$			1	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 16V$ , $V_{DS} = 0$			$\pm 10$	$\mu A$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10V$ , $I_D = 1mA$	1.0		2.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 10V$ , $I_D = 7A$	7	10		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = 7A$ , $V_{GS} = 10V$		27	36	$m\Omega$
	$R_{DS(on)2}$	$I_D = 4A$ , $V_{GS} = 4.5V$		40	56	$m\Omega$
Input Capacitance	$C_{iss}$	$V_{DS} = 10V$ , $f = 1MHz$		530		pF
Output Capacitance	$C_{oss}$	$V_{DS} = 10V$ , $f = 1MHz$		170		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS} = 10V$ , $f = 1MHz$		90		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		9		ns
Rise Time	$t_r$	See specified Test Circuit		130		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		40		ns
Fall Time	$t_f$	See specified Test Circuit		60		ns
Total Gate Charge	$Q_g$	$V_{DS} = 10V$ , $V_{GS} = 10V$ , $I_D = 15A$		10		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS} = 10V$ , $V_{GS} = 10V$ , $I_D = 15A$		1.5		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS} = 10V$ , $V_{GS} = 10V$ , $I_D = 15A$		1.0		nC
Diode Forward Voltage	$V_{SD}$	$I_S = 15A$ , $V_{GS} = 0$	1.0	1.2		V

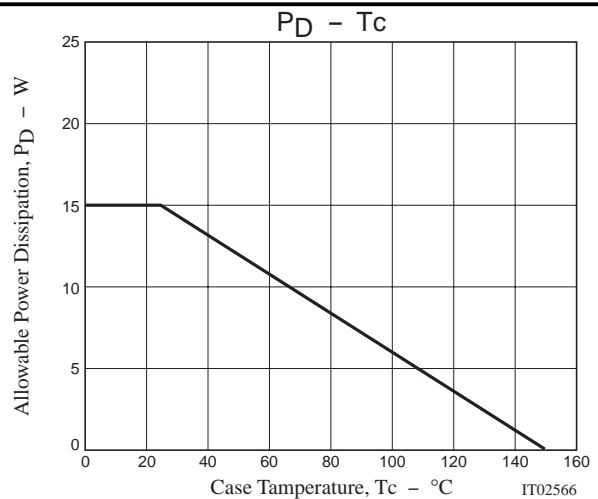
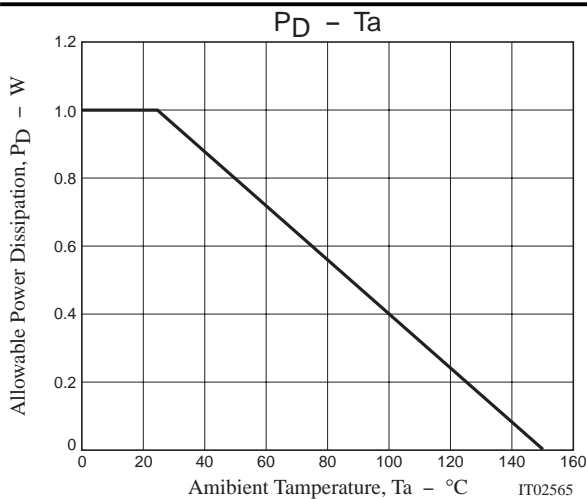
Marking : K3278

## Switching Time Test Circuit





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