



2SJ453

Ultrahigh-Speed Switching Applications

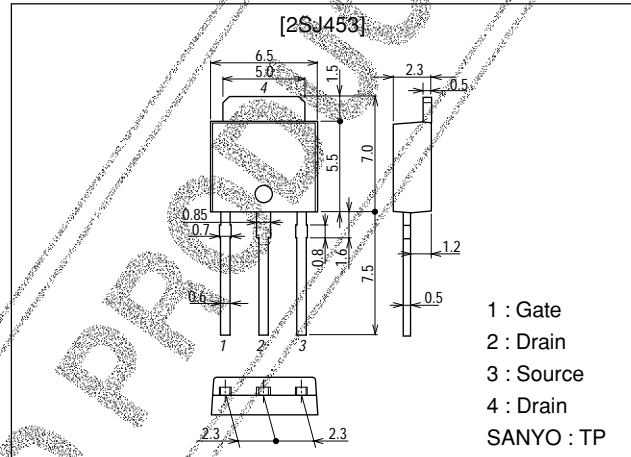
Features

- Low ON resistance.
- Ultrahigh-speed switching.
- Low voltage drive.
- On-chip FRD.

Package Dimensions

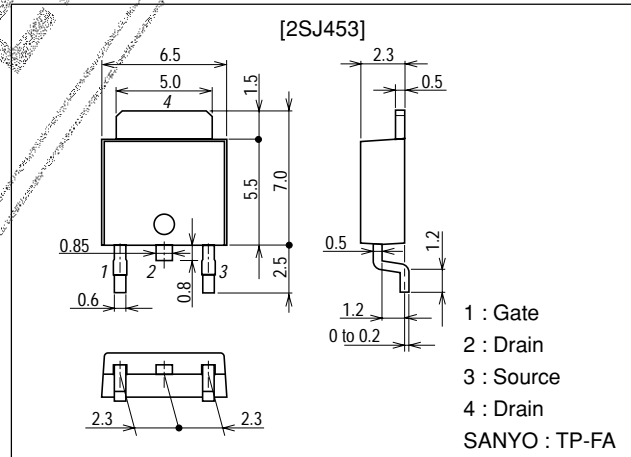
unit:mm

2083B



unit:mm

2092B



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Specifications

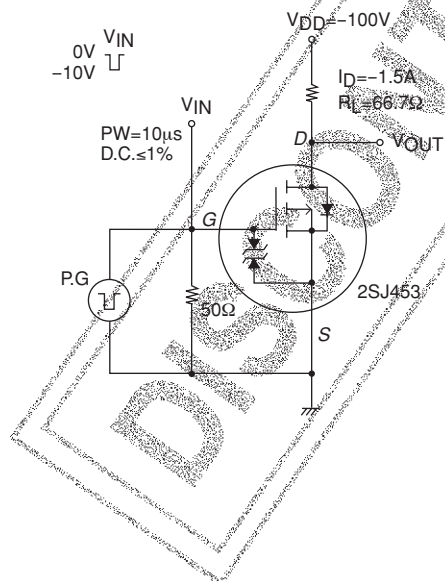
Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		-250	V
Gate-to-Source Voltage	V_{GSS}		±30	V
Drain Current (DC)	I_D		-3	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	-12	A
Allowable Power Dissipation	P_D		1	W
		$T_c = 25^\circ C$	30	W
Channel Temperature	T_{ch}		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

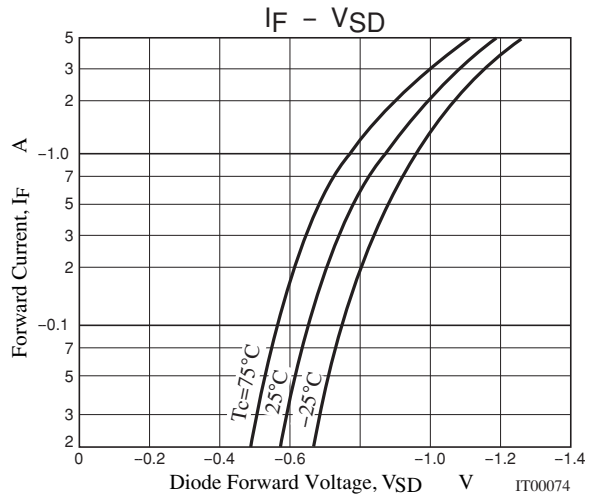
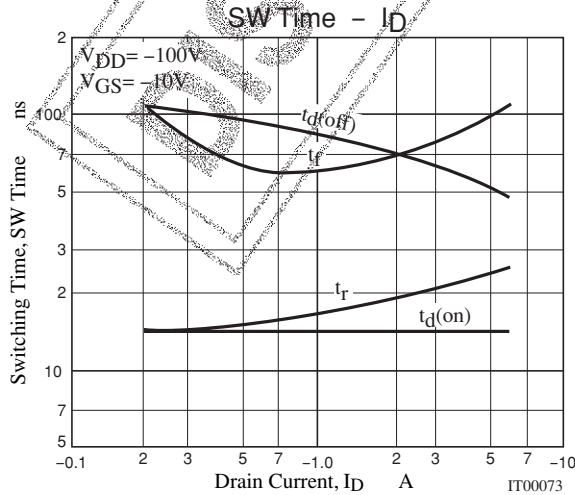
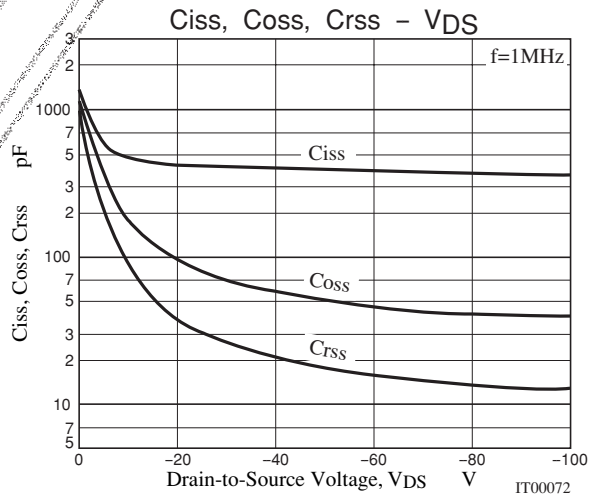
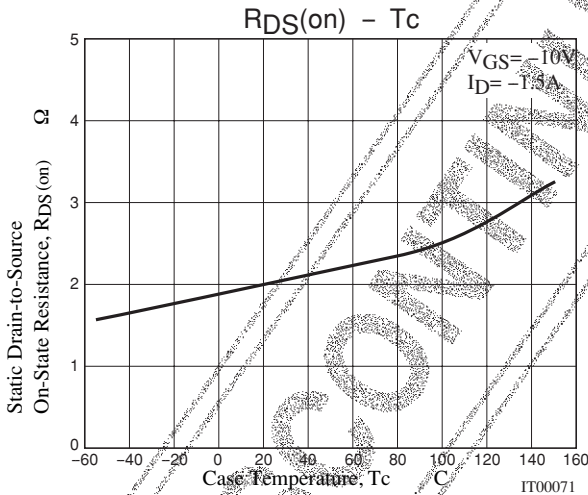
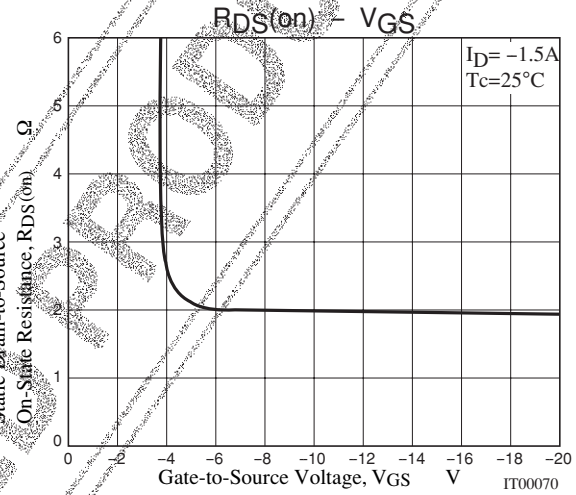
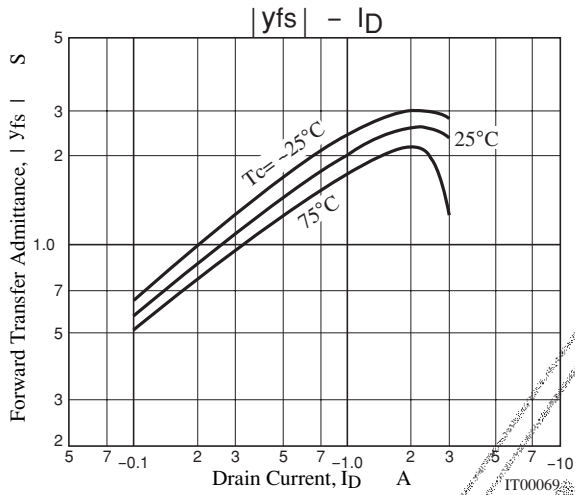
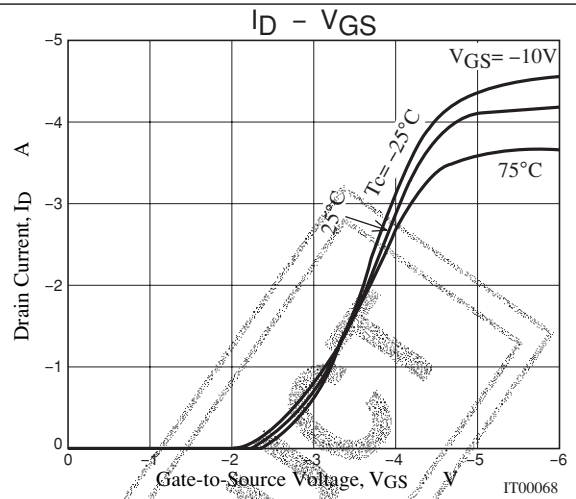
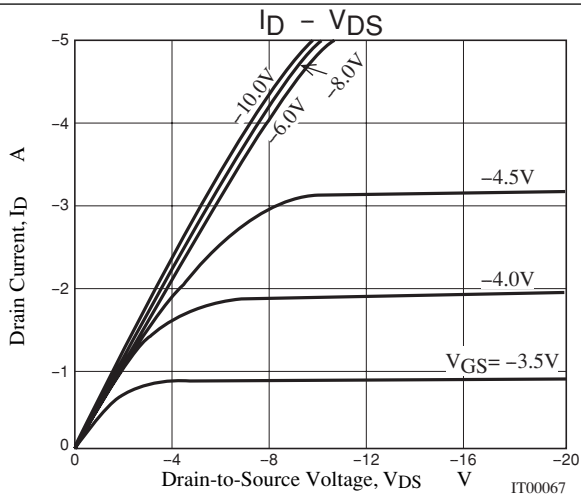
Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1mA$, $V_{GS} = 0$	-250			V
Gate-to-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G = \pm 100\mu A$, $V_{DS} = 0$	±30			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -250V$, $V_{GS} = 0$			-100	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 25V$, $V_{DS} = 0$			±10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10V$, $I_D = -1mA$	-2.0		-3.0	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10V$, $I_D = -1.5A$	17	2.4		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)}$	$I_D = -1.5A$, $V_{GS} = -10V$		2.0	2.6	Ω
Input Capacitance	C_{iss}	$V_{DS} = -20V$, $f = 1MHz$		420		pF
Output Capacitance	C_{oss}	$V_{DS} = -20V$, $f = 1MHz$		100		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = -20V$, $f = 1MHz$		40		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		14		ns
Rise Time	t_r	See specified Test Circuit		18		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		75		ns
Fall Time	t_f	See specified Test Circuit		65		ns
Diode Forward Voltage	V_{SD}	$I_S = -3A$, $V_{GS} = 0$	-1.1	-1.5		V
Diode Reverse Recovery Time	t_{rr}	$I_S = -3A$, $di/dt = 100A/\mu s$		100		ns

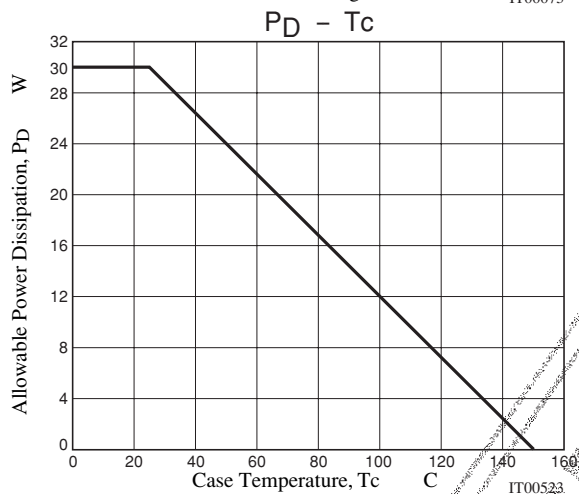
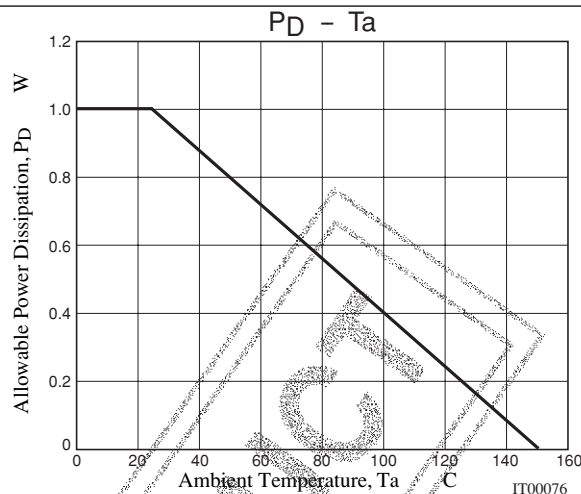
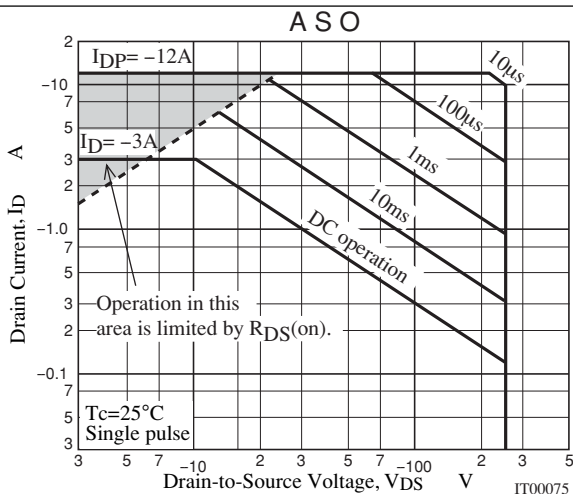
Switching Time Test Circuit



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