

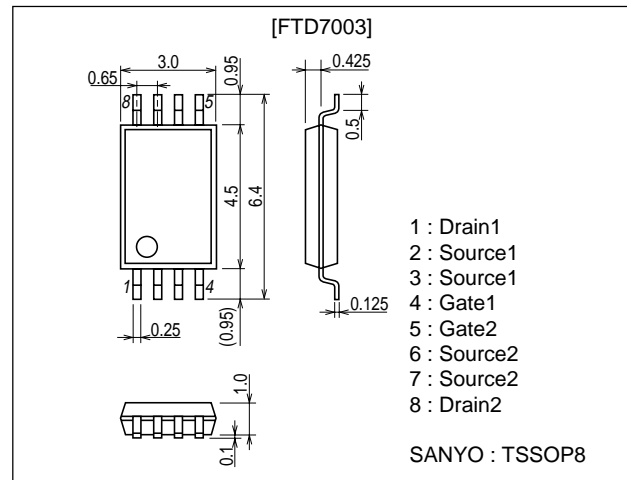
**FTD7003****High-Speed Switching Applications****Features**

- Low ON-resistance.
- 1.8V drive.
- Mounting height 1.1mm.
- Composite type, facilitating high-density mounting.

**Package Dimensions**

unit : mm

2155A

**Specifications****Absolute Maximum Ratings** at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		-12	V
Gate-to-Source Voltage	V <sub>GS</sub>		±8.5	V
Drain Current (DC)	I <sub>D</sub>		-6	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-30	A
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (1200mm²×0.8mm) 1unit PW≤10s	1.4	W
Total Dissipation	P <sub>T</sub>	Mounted on a ceramic board (1200mm²×0.8mm) PW≤10s	1.6	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

**Electrical Characteristics** at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =-1mA, V <sub>GS</sub> =0	-12			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-12V, V <sub>GS</sub> =0			-10	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±6.8V, V <sub>DS</sub> =0			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =-6V, I <sub>D</sub> =-1mA	-0.3		-1.0	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-6V, I <sub>D</sub> =-6A	12.6	18		S

Marking : D7003

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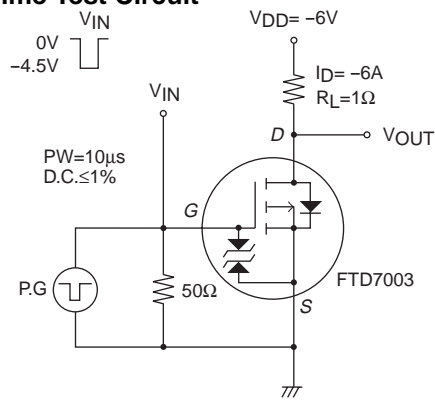
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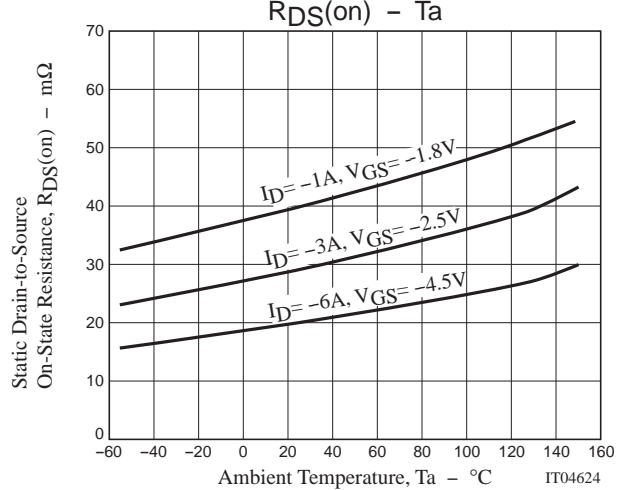
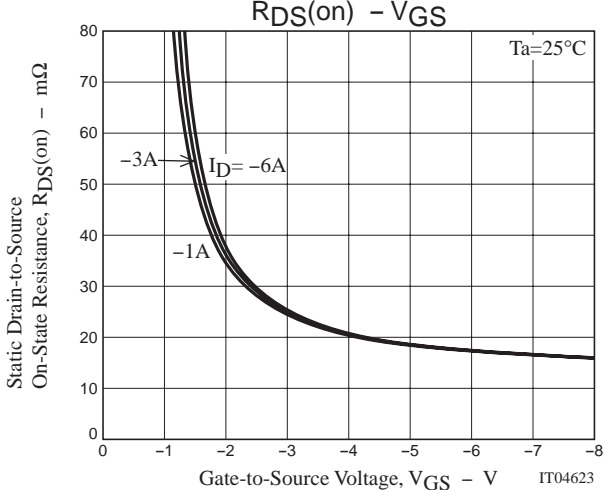
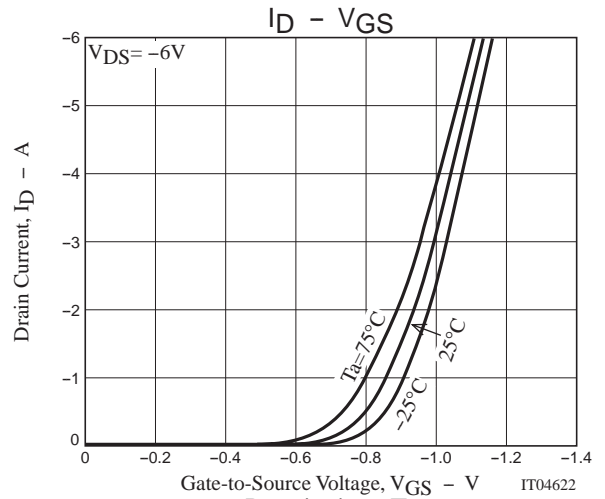
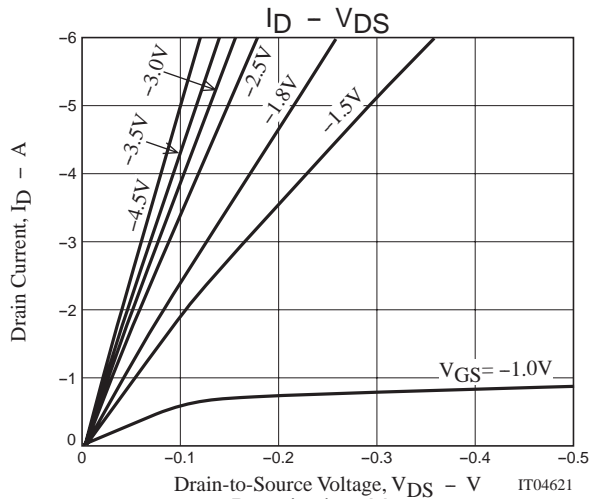
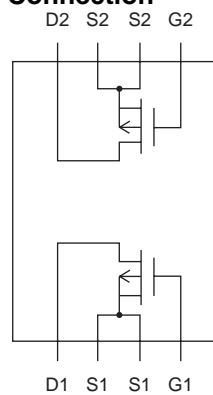
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source On-State Resistance	$R_{DS(on) 1}$	$I_D = -6A, V_{GS} = -4.5V$		20	25	mΩ
	$R_{DS(on) 2}$	$I_D = -3A, V_{GS} = -2.5V$		29	40	mΩ
	$R_{DS(on) 3}$	$I_D = -1A, V_{GS} = -1.8V$		40	60	mΩ
Input Capacitance	$C_{iss}$	$V_{DS} = -6V, f = 1MHz$		2100		pF
Output Capacitance	$C_{oss}$	$V_{DS} = -6V, f = 1MHz$		580		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS} = -6V, f = 1MHz$		500		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit		20		ns
Rise Time	$t_r$	See specified Test Circuit		380		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit		220		ns
Fall Time	$t_f$	See specified Test Circuit		230		ns
Total Gate Charge	$Q_g$	$V_{DS} = -6V, V_{GS} = -4.5V, I_D = -6A$		28		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS} = -6V, V_{GS} = -4.5V, I_D = -6A$		2.5		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS} = -6V, V_{GS} = -4.5V, I_D = -6A$		6.5		nC
Diode Forward Voltage	$V_{SD}$	$I_S = -6A, V_{GS} = 0$		-0.83	-1.5	V

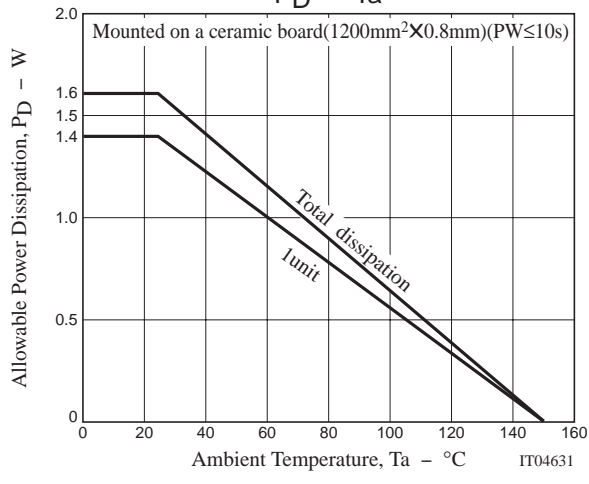
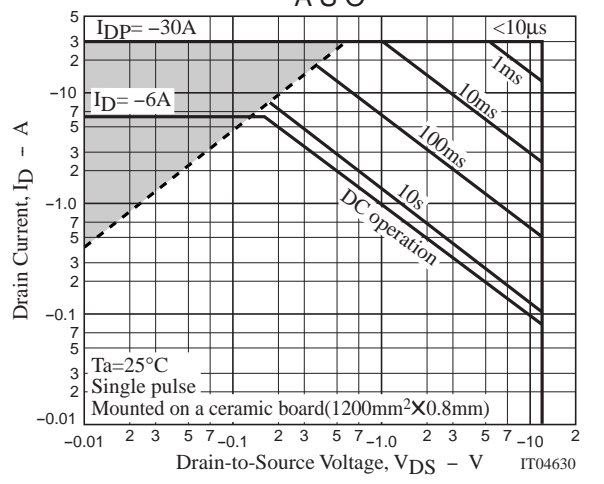
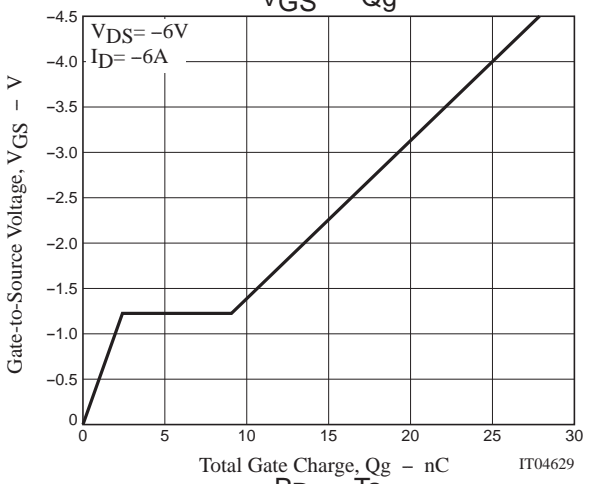
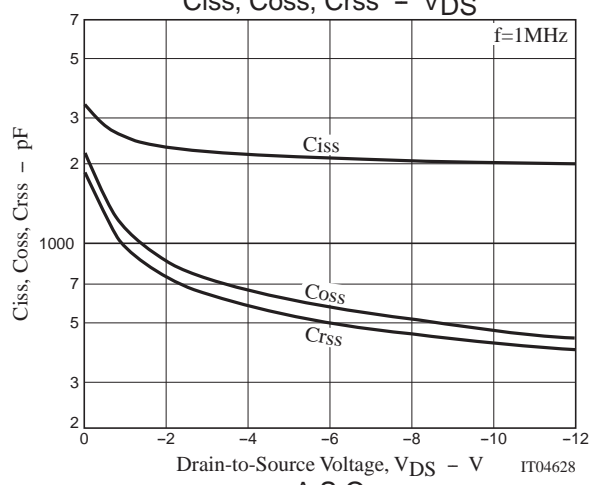
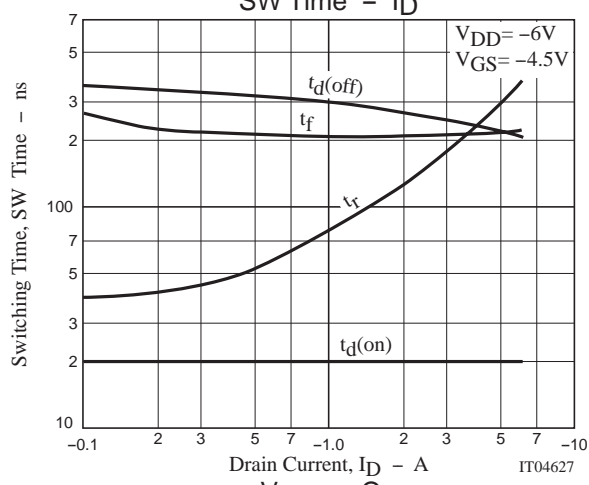
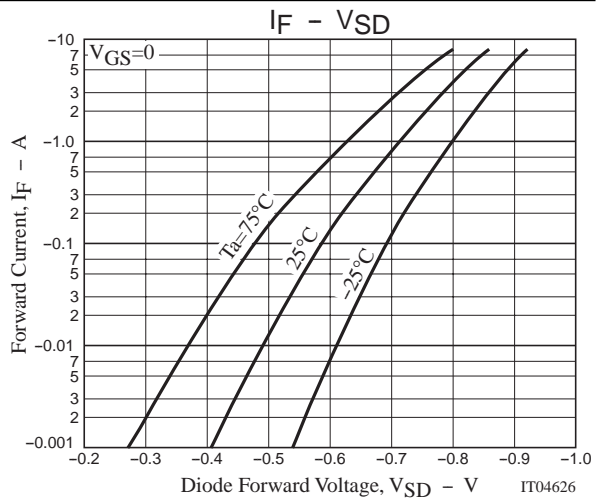
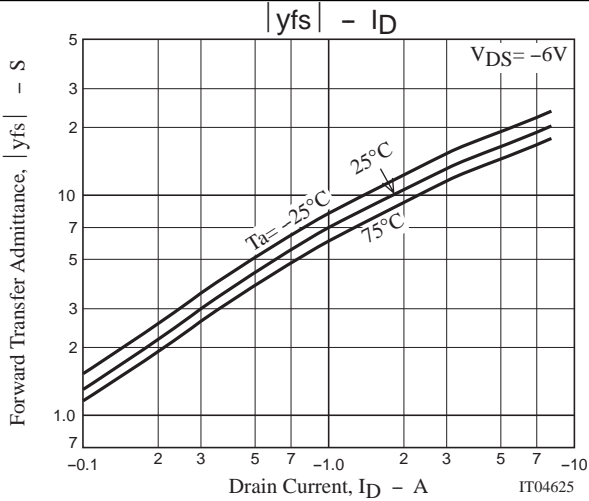
## Switching Time Test Circuit



## Electrical Connection



# FTD7003



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