

**FTD1003**

Load Switching Applications

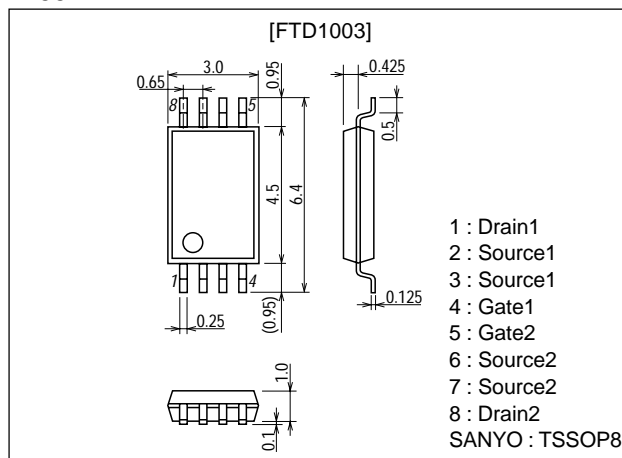
Features

- Low ON resistance.
- 2.5V drive.
- Mounting height 1.1mm.
- Composite type, facilitating high-density mounting.

Package Dimensions

unit:mm

2155A



Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		-20	V
Gate-to-Source Voltage	V_{GSS}		± 10	V
Drain Current (DC)	I_D		-1.4	A
Drain Current (pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	-5.6	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (1000mm ² ×0.8mm) 1unit	0.8	W
Total Dissipation	P_T	Mounted on a ceramic board (1000mm ² ×0.8mm)	1.0	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	$V_{(BR)DSS}$	$I_D = -1\text{mA}$, $V_{GS} = 0$	-20			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -20\text{V}$, $V_{GS} = 0$			-10	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 8\text{V}$, $V_{DS} = 0$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10\text{V}$, $I_D = -1\text{mA}$	-0.4		-1.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10\text{V}$, $I_D = -1.4\text{A}$	2.1	3		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -1.4\text{A}$, $V_{GS} = -4\text{V}$		235	315	m Ω
	$R_{DS(on)2}$	$I_D = -0.7\text{A}$, $V_{GS} = -2.5\text{V}$		340	480	m Ω
Input Capacitance	C_{iss}	$V_{DS} = -10\text{V}$, $f = 1\text{MHz}$		180		pF
Output Capacitance	C_{oss}	$V_{DS} = -10\text{V}$, $f = 1\text{MHz}$		90		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = -10\text{V}$, $f = 1\text{MHz}$		43		pF

Marking : D1003

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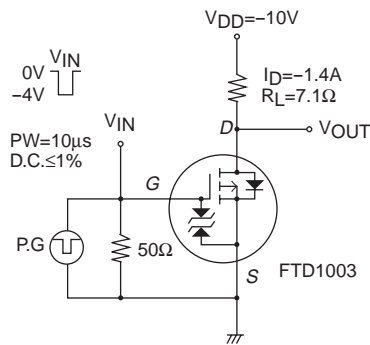
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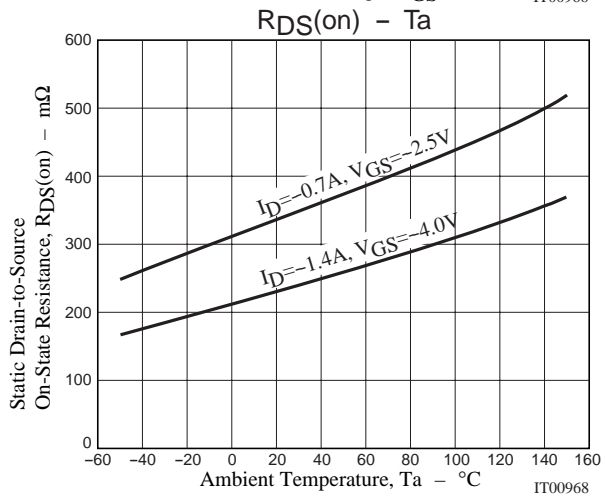
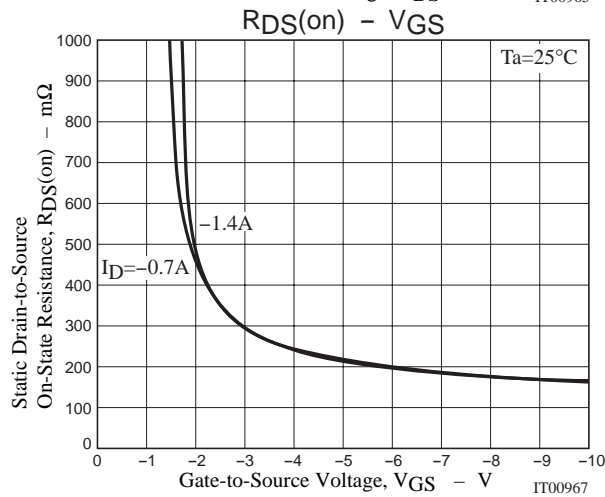
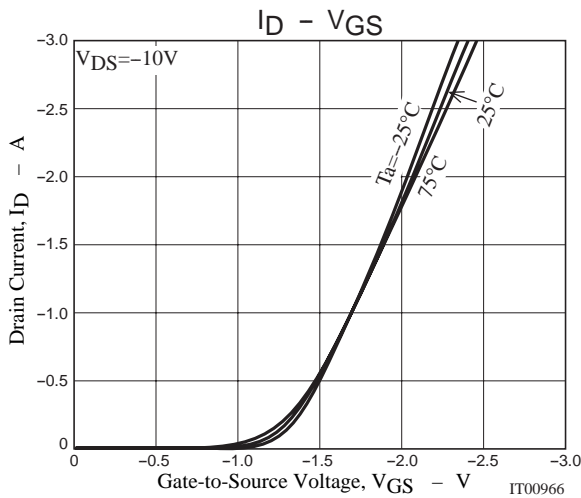
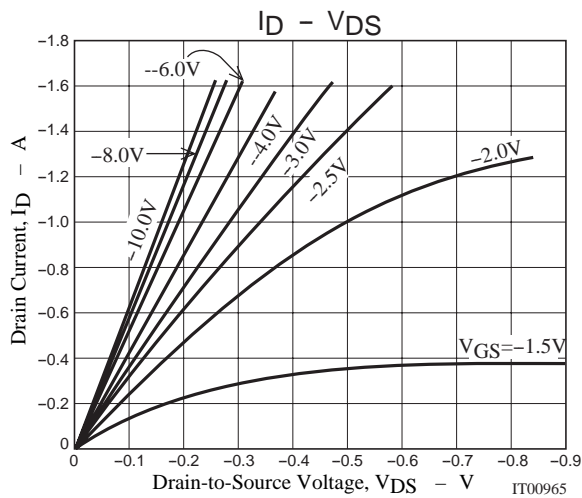
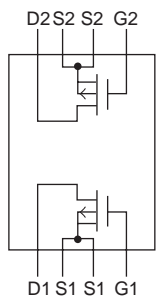
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See Specified Test Circuit		10		ns
Rise Time	t_r	See Specified Test Circuit		380		ns
Turn-OFF Delay Time	$t_{d(off)}$	See Specified Test Circuit		280		ns
Fall Time	t_f	See Specified Test Circuit		310		ns
Total Gate Charge	Q_g	$V_{DS}=-10V, V_{GS}=-10V, I_D=-1.4A$		9.5		nC
Gate-to-Source Charge	Q_{gs}			1		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			1.5		nC
Diode Forward Voltage	V_{SD}	$I_S=-1.4A, V_{GS}=0$		-0.83	-1.2	V

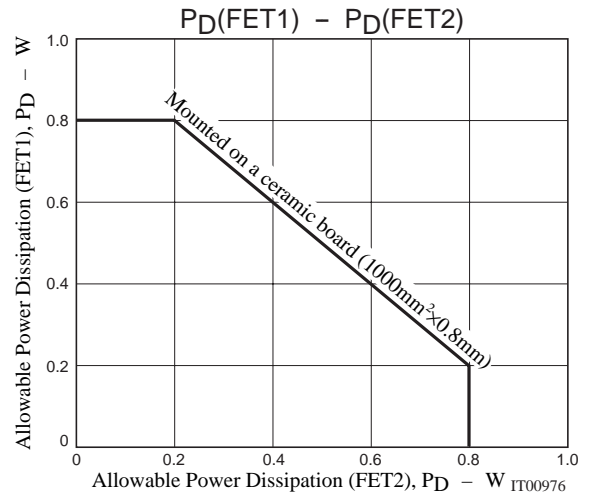
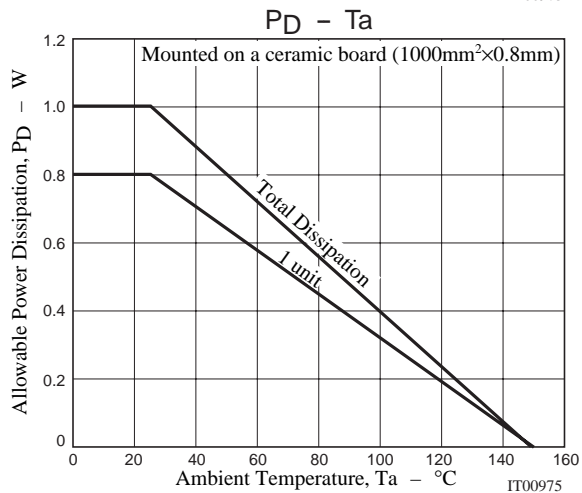
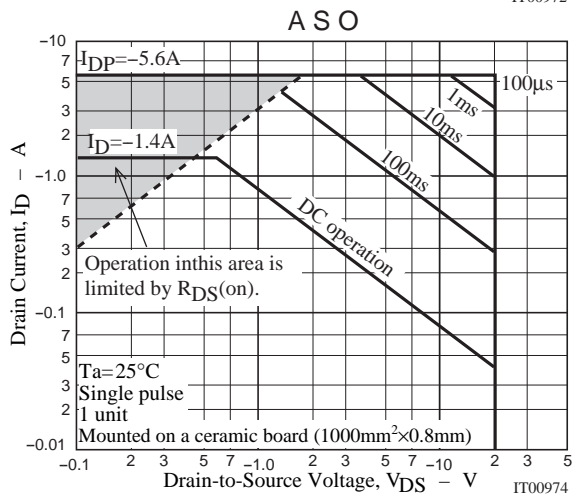
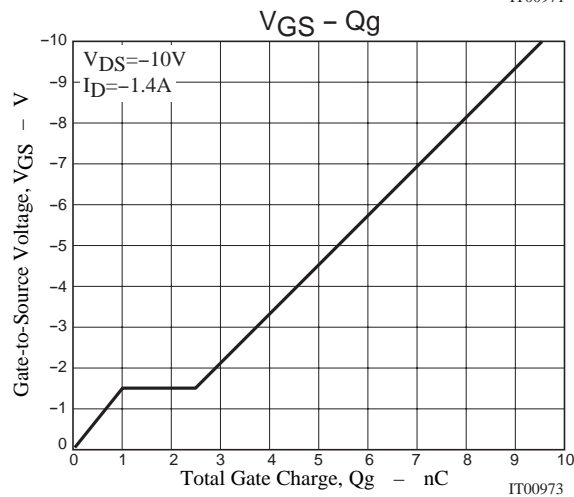
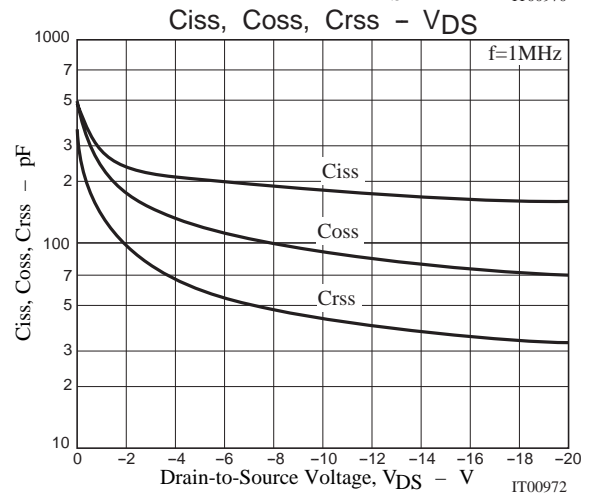
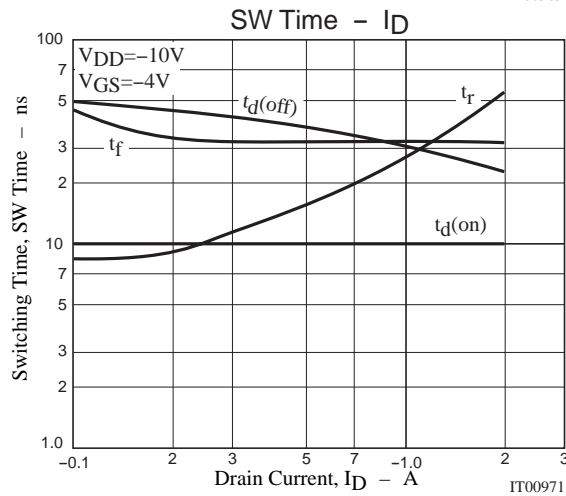
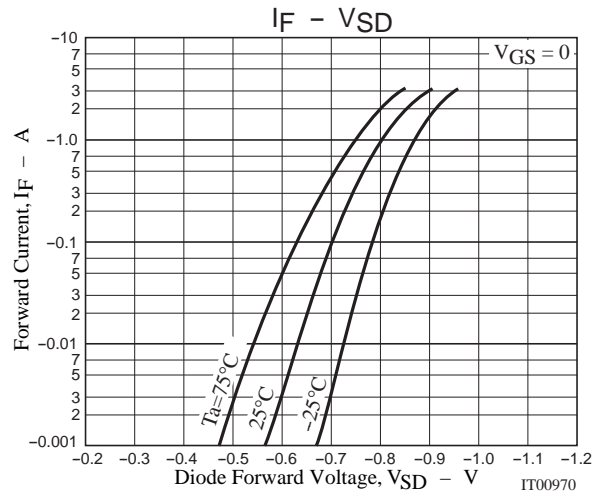
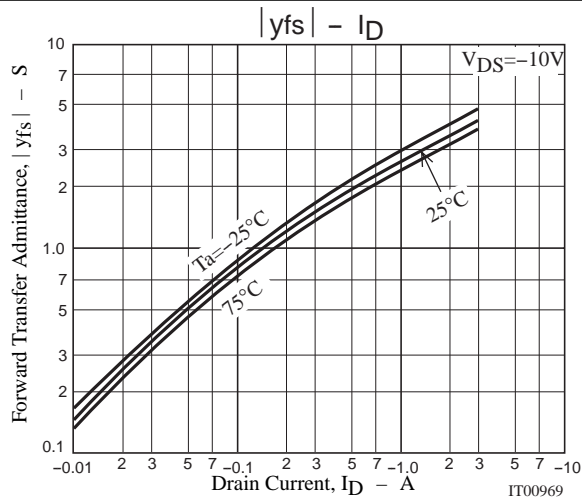
Switching Time Test Circuit



Electrical Connection



FTD1003



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