

H7N0608FM

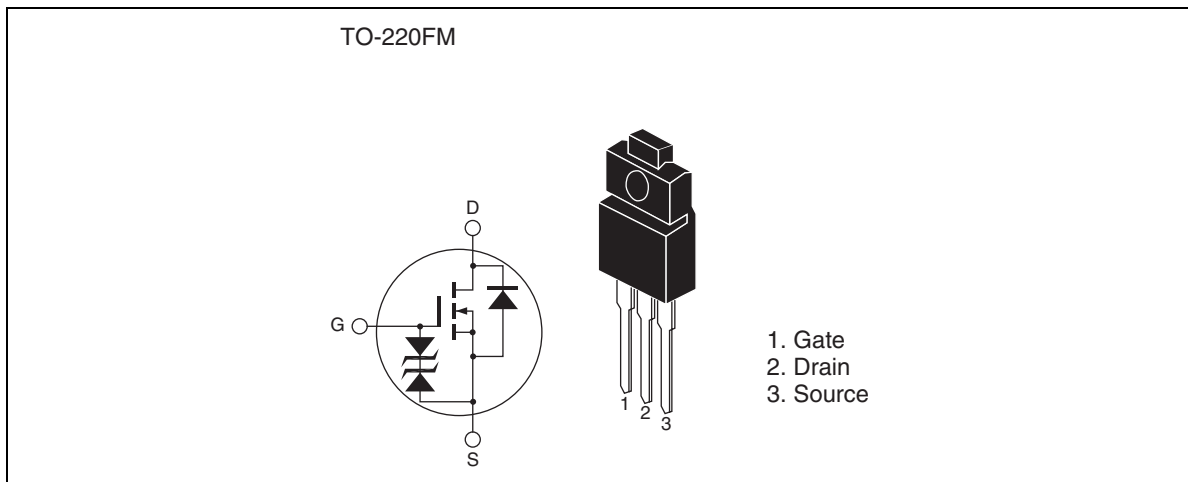
Silicon N Channel MOS FET
Power Switching

REJ03G0165-0100Z
Rev.1.00
Dec.04.2003

Features

- Low on-resistance
 $R_{DS(on)} = 6.5 \text{ m}\Omega$ typ.
- Low drive current
- 4.5 V gate drive device can be driven from 5 V source

Outline



Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V _{DSS}	60	V
Gate to source voltage	V _{GSS}	±20	V
Drain current	I _D	50	A
Drain peak current	I _D (pulse) ^{Note1}	200	A
Body-drain diode reverse drain current	I _{DR}	50	A
Avalanche current	I _{AP} ^{Note3}	40	A
Avalanche energy	E _{AR} ^{Note3}	137	mJ
Channel dissipation	P _{ch} ^{Note2}	30	W
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

Notes: 1. PW ≤ 10 μs, duty cycle ≤ 1%
2. Value at Tc = 25°C
3. Value at Tch = 25°C, Rg ≥ 50 Ω

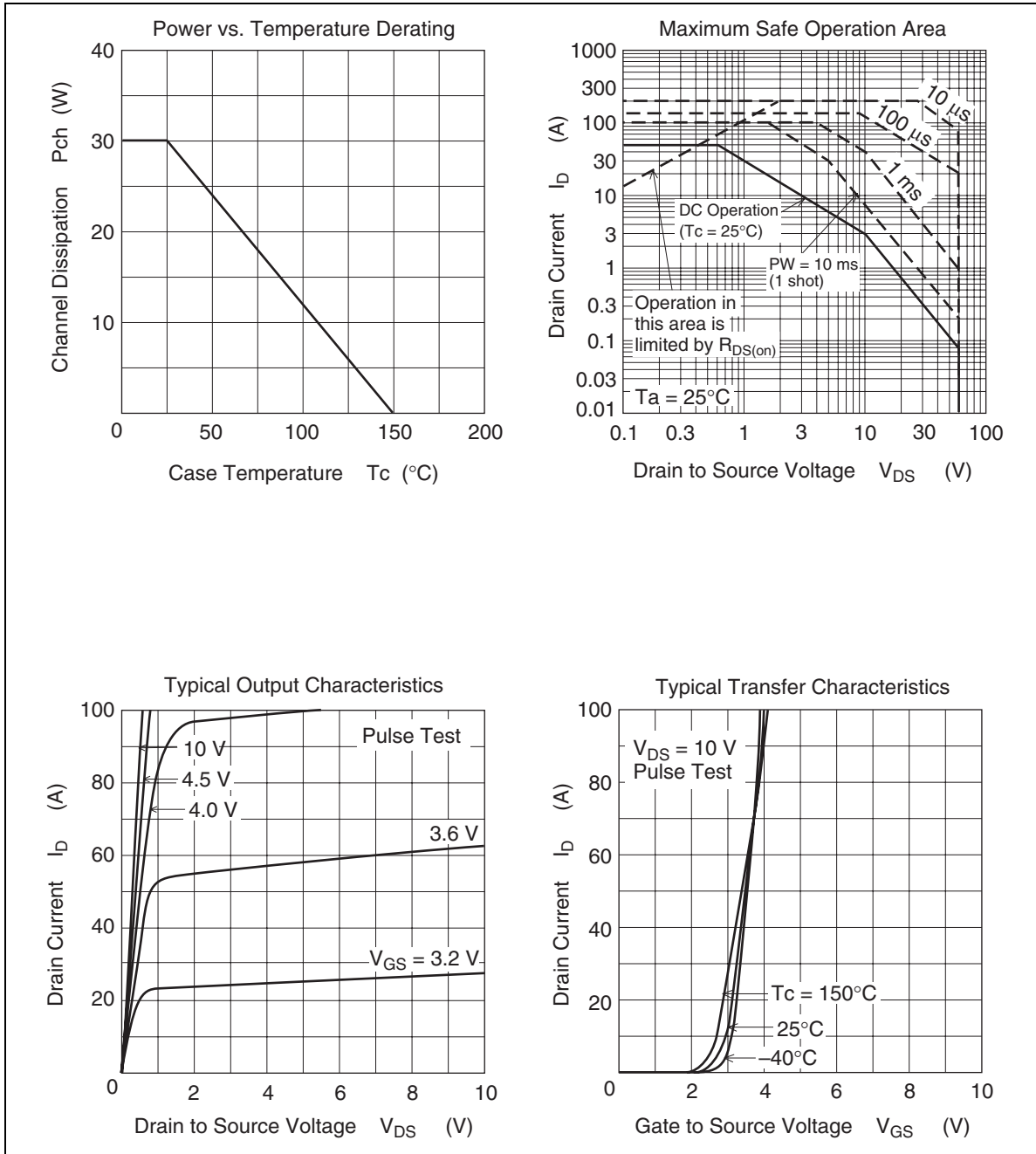
Electrical Characteristics

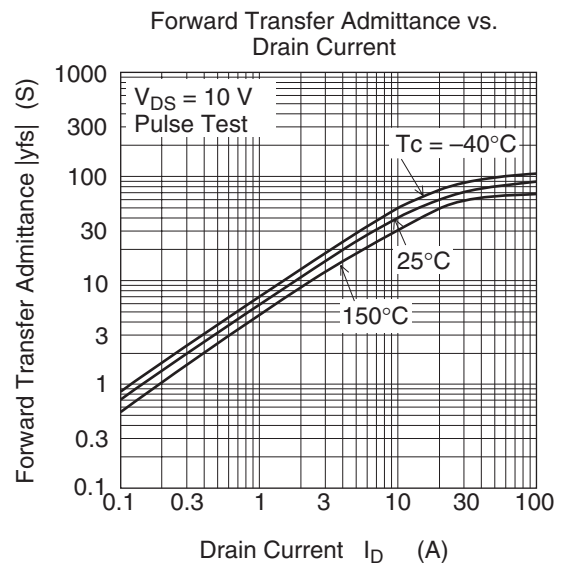
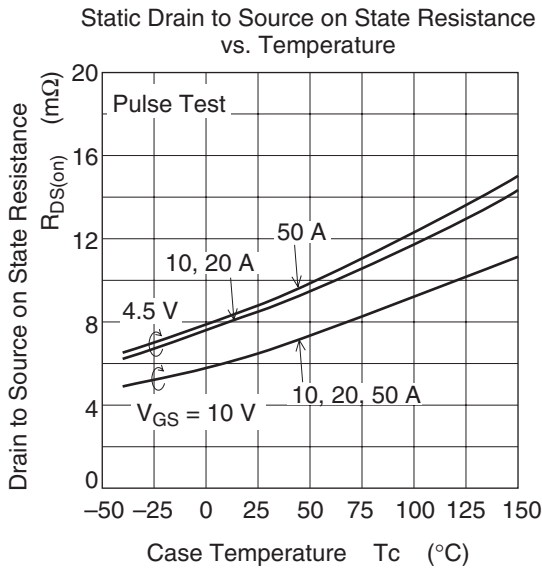
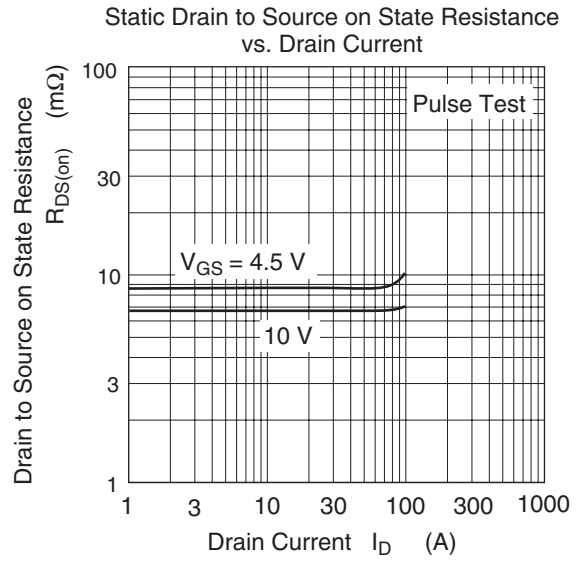
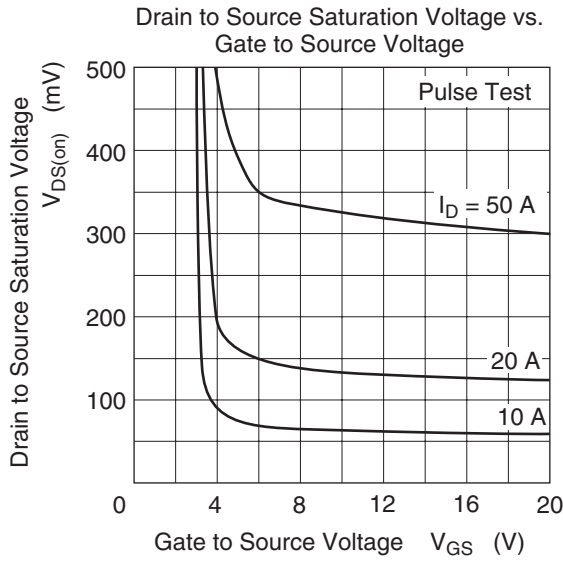
(Ta = 25°C)

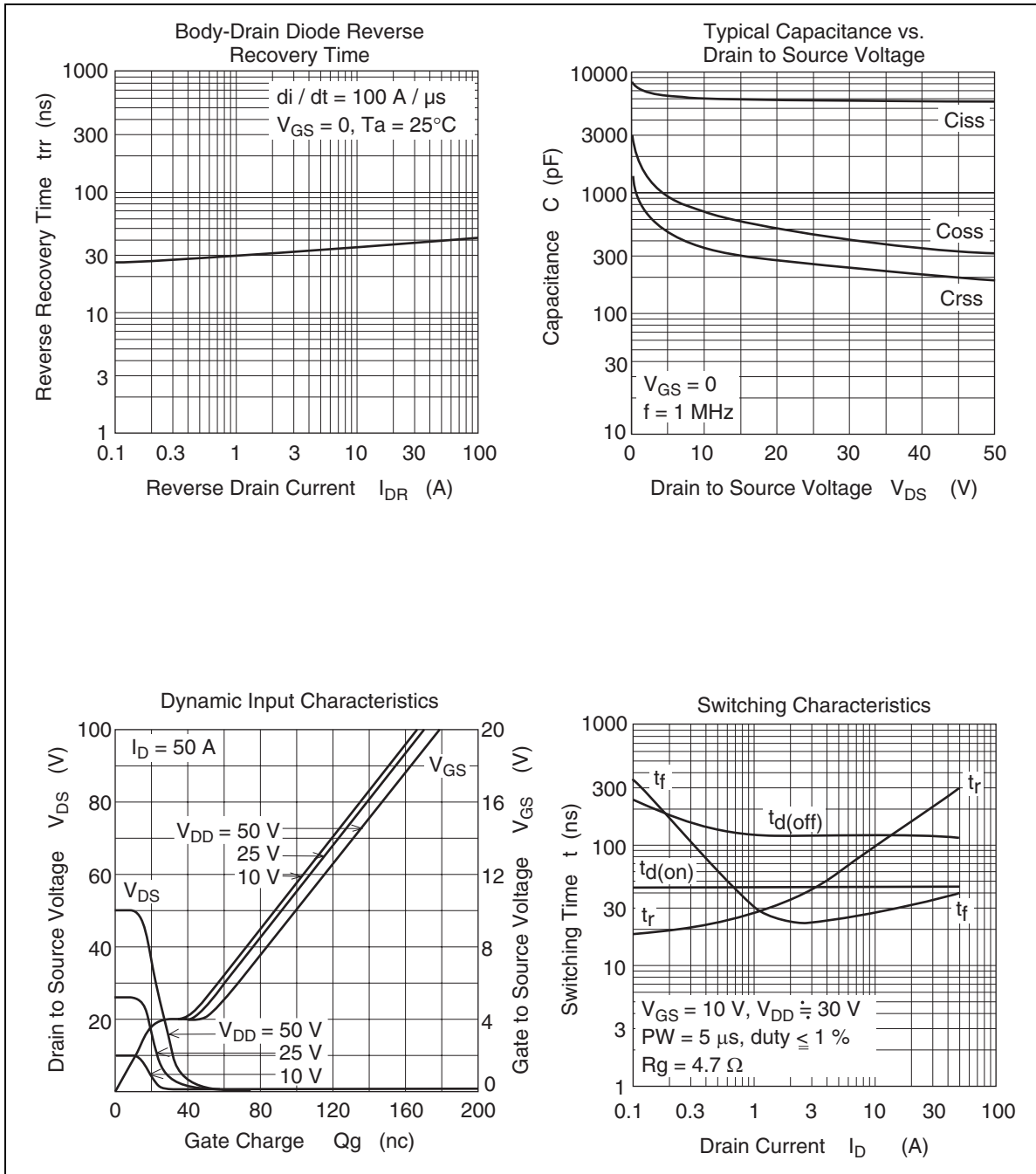
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	60	—	—	V	$I_D = 10 \text{ mA}, V_{GS} = 0$
Gate to source breakdown Voltage	$V_{(BR)GSS}$	± 20	—	—	V	$I_G = \pm 100 \text{ }\mu\text{A}, V_{DS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 10	μA	$V_{GS} = \pm 16 \text{ V}, V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	10	μA	$V_{DS} = 60 \text{ V}, V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	1.5	—	2.5	V	$I_D = 1 \text{ mA}, V_{DS} = 10 \text{ V}^{\text{Note4}}$
Static drain to source on state resistance	$R_{DS(on)}$	—	6.5	8.5	$\text{m}\Omega$	$I_D = 20 \text{ A}, V_{GS} = 10 \text{ V}^{\text{Note4}}$
		—	8.5	13	$\text{m}\Omega$	$I_D = 20 \text{ A}, V_{GS} = 4.5 \text{ V}^{\text{Note4}}$
Forward transfer admittance	$ y_{fs} $	40	60	—	S	$I_D = 20 \text{ A}, V_{GS} = 10 \text{ V}^{\text{Note4}}$
Input capacitance	C_{iss}	—	6200	—	pF	$V_{DS} = 10 \text{ V}$
Output capacitance	C_{oss}	—	680	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	350	—	pF	$f = 1 \text{ MHz}$
Total gate charge	Q_g	—	100	—	nC	$V_{DD} = 25 \text{ V}$
Gate to source charge	Q_{gs}	—	20	—	nC	$V_{GS} = 10 \text{ V}$
Gate to drain charge	Q_{gd}	—	20	—	nC	$I_D = 50 \text{ A}$
Turn-on delay time	$t_{d(on)}$	—	45	—	ns	$V_{GS} = 10 \text{ V}, I_D = 20 \text{ A}$
Rise time	t_r	—	160	—	ns	$V_{DD} \cong 30 \text{ V}$
Turn-off delay time	$t_{d(off)}$	—	125	—	ns	$R_L = 1.5 \text{ }\Omega$
Fall time	t_f	—	32	—	ns	$R_g = 4.7 \text{ }\Omega$
Body–drain diode forward voltage	V_{DF}	—	0.92	—	V	$I_F = 50 \text{ A}, V_{GS} = 0$
Body–drain diode reverse recovery time	t_{rr}	—	40	—	ns	$I_F = 50 \text{ A}, V_{GS} = 0$ $di_F/dt = 100 \text{ A}/\mu\text{s}$

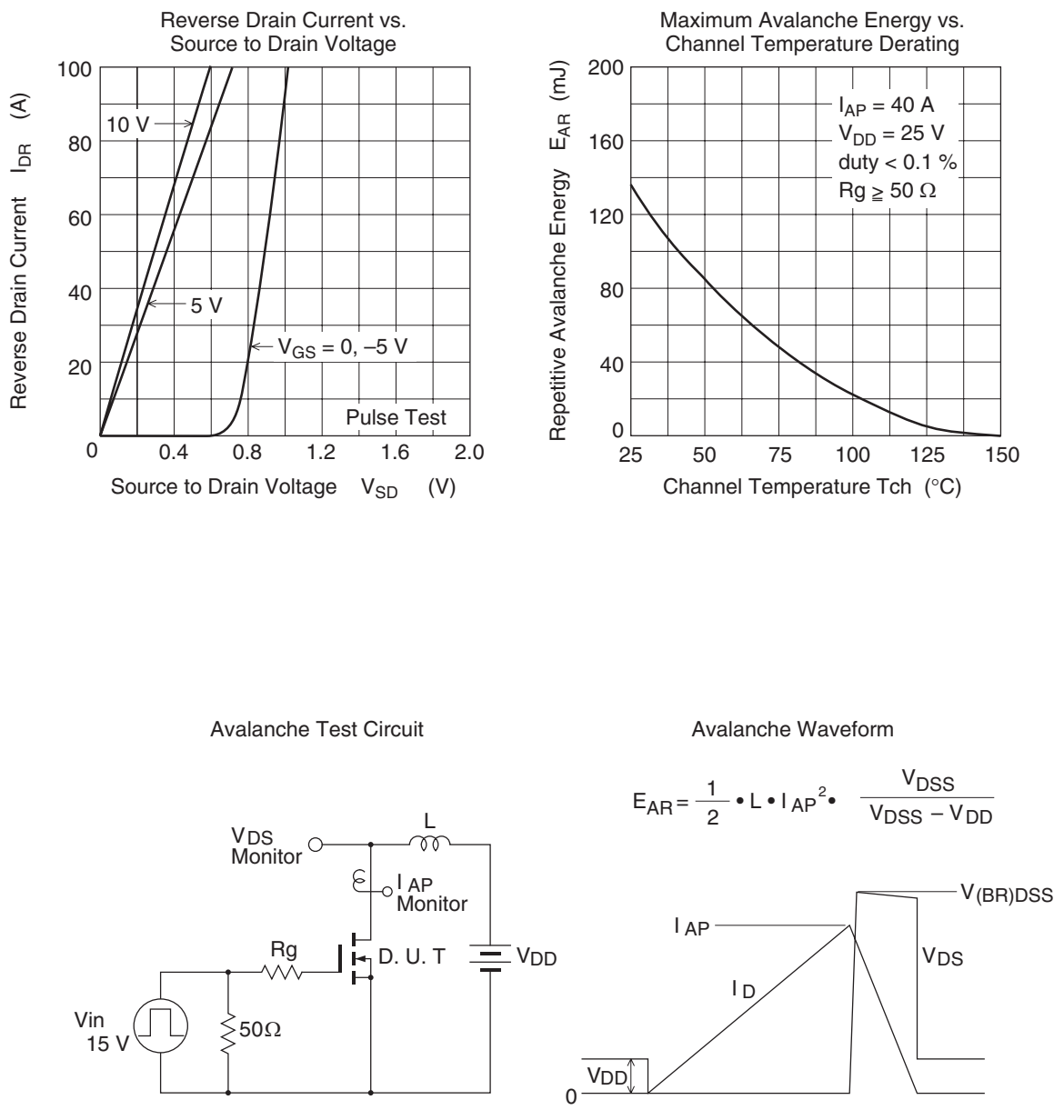
Notes: 4. Pulse test

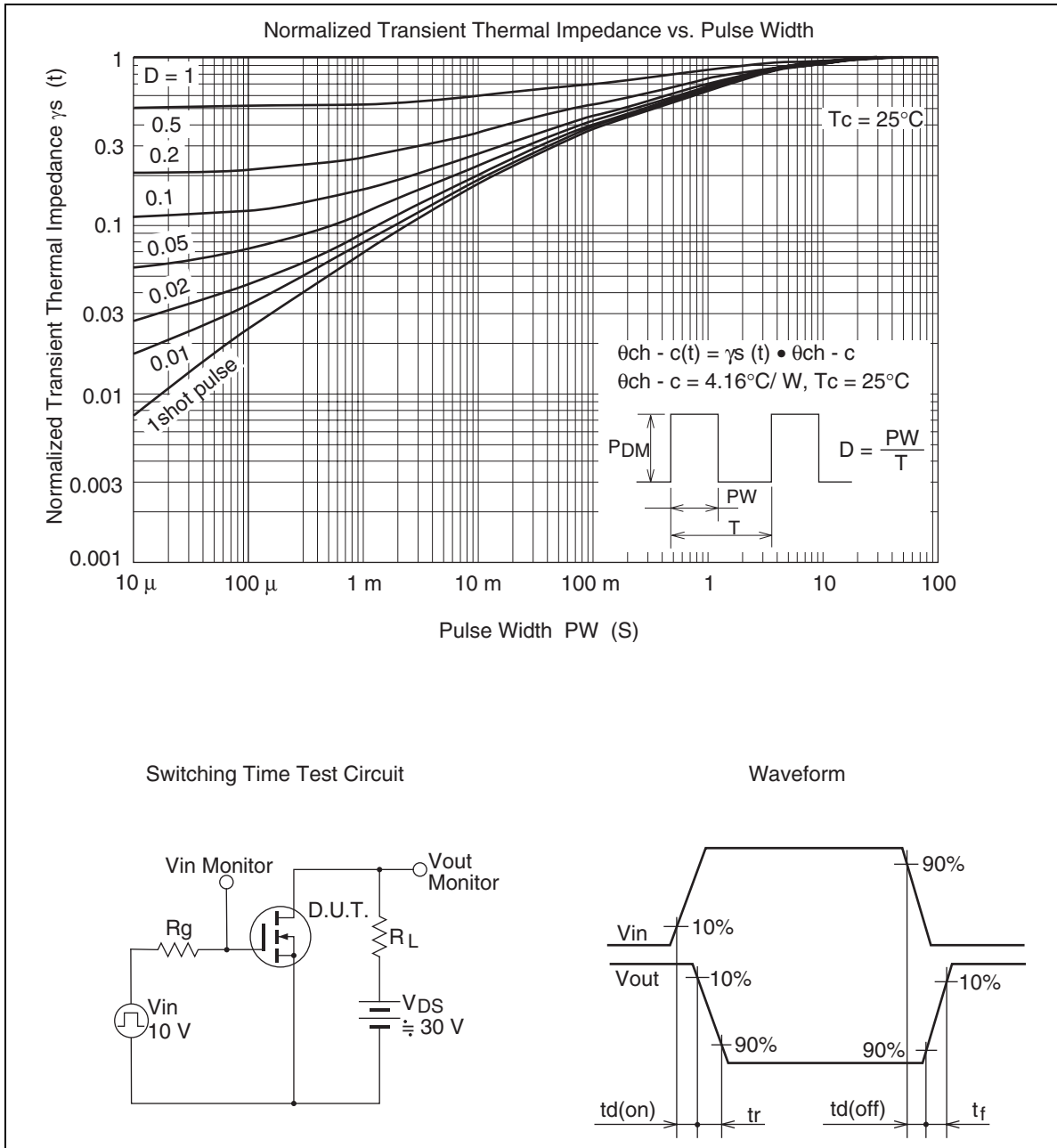
Main Characteristics



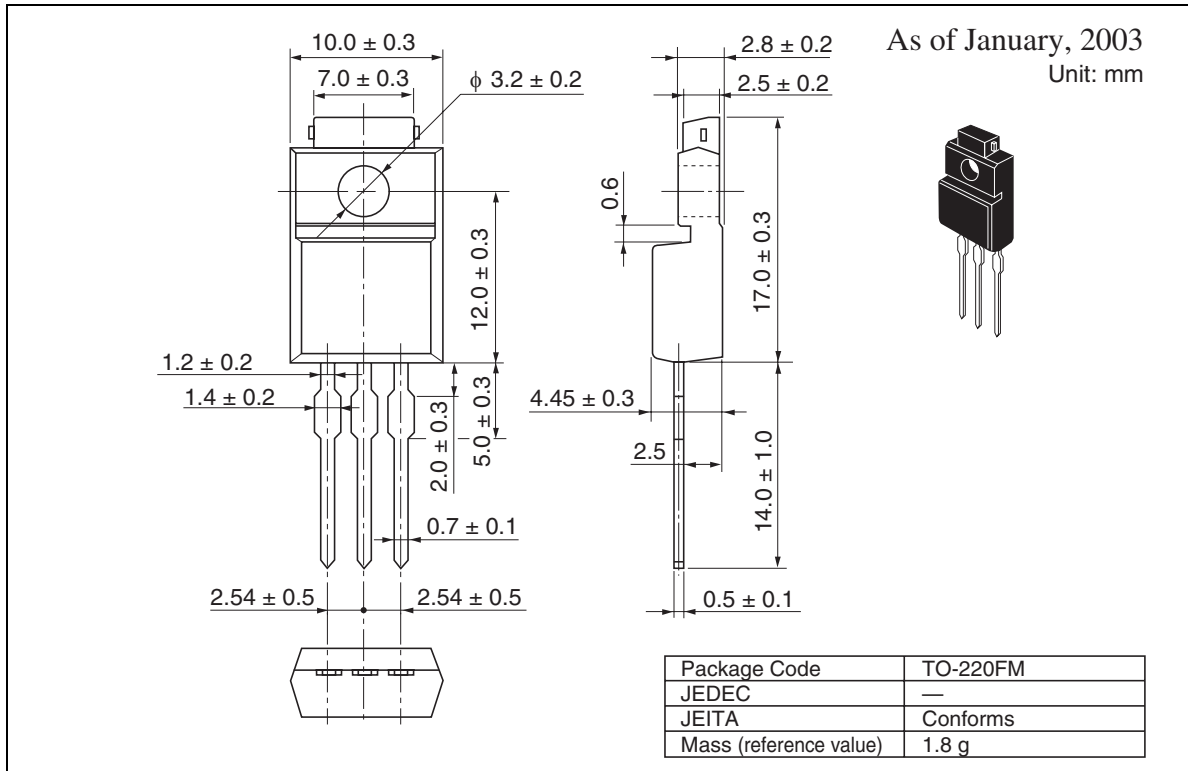








Package Dimensions



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