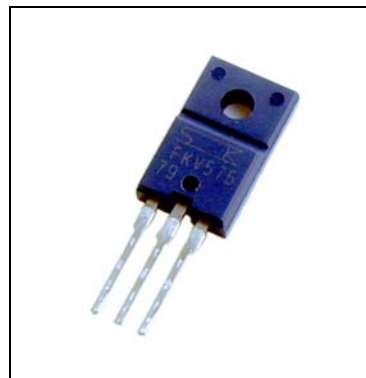


■Features

- High Current Capability (I_D :75A (DC))
- Low on-resistance ($R_{DS(on)}$:7m Ω typ)
- Avalanche energy guarantee

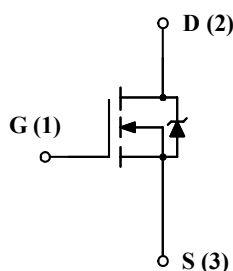
■Package----FM20(TO220 Full Mold)



■Applications

- DC-DC Converters
- High speed switching

■Equivalent circuit



Absolute maximum ratings

(Ta=25°C)

Characteristic	Symbol	Rating	Unit
Drain to Source Voltage	VDSS	50	V
Gate to Source Voltage	VGSS	±20	V
Continuous Drain Current	ID	±75A	A
Pulsed Drain Current	ID(pulse) ¹⁾	±200A	A
Maximum Power Dissipation	PD	40 (Tc=25°C)	W
Single Pulse Avalanche Energy	EAS ²⁾	300	mJ
Avalanche Current	IAS	75	A
Channel Temperature	Tch	150	°C
Storage Temperature	Tstg	−55 to 150	°C

1) PW≤100μs, duty cycle≤1%

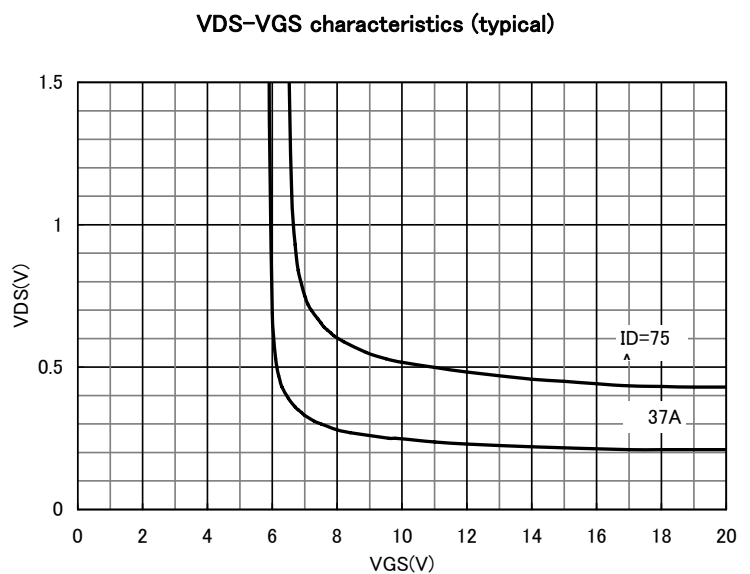
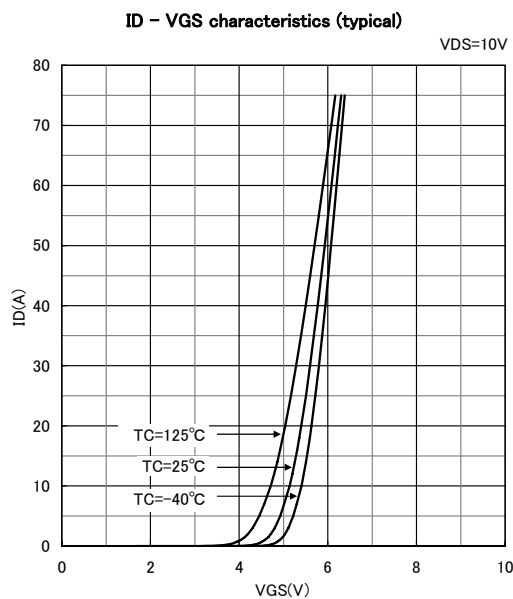
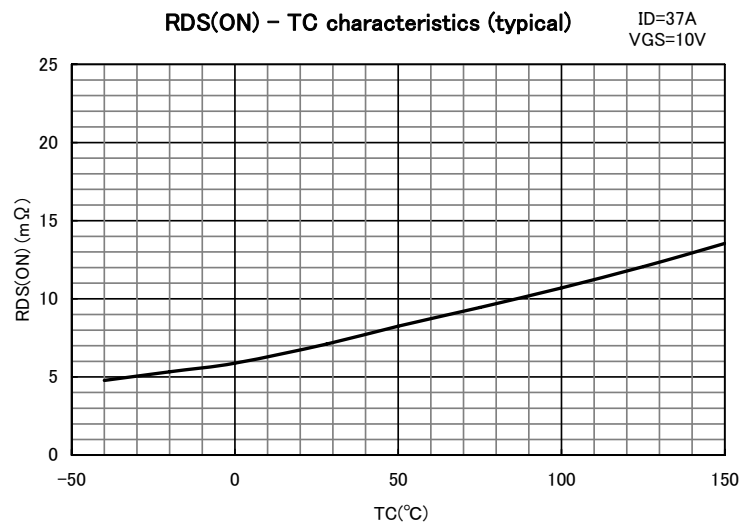
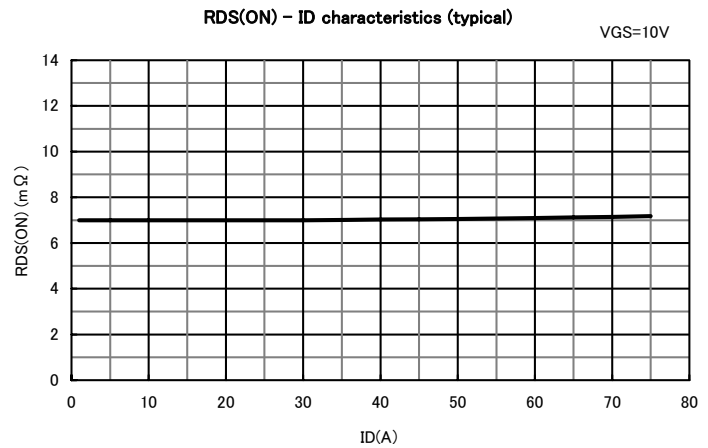
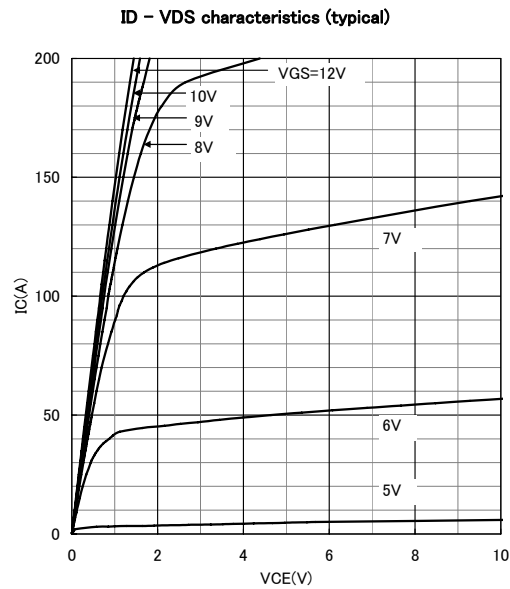
2) VDD=20V, L=64μH, ILp=75A, unclamped, RG=50Ω, See Fig.1

Electrical characteristics

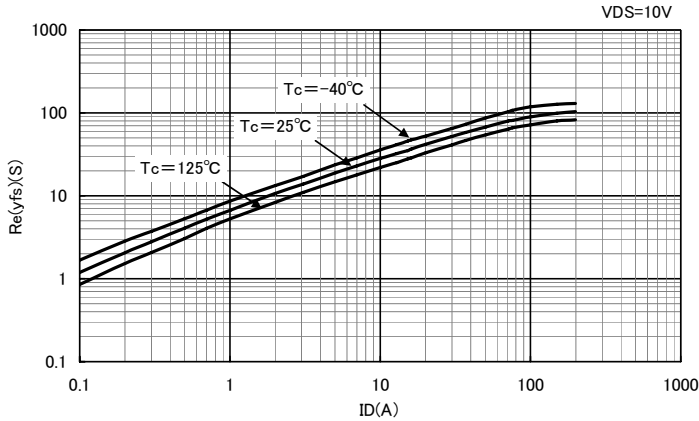
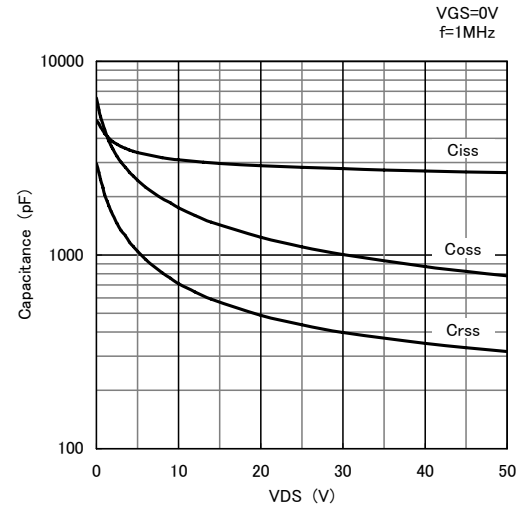
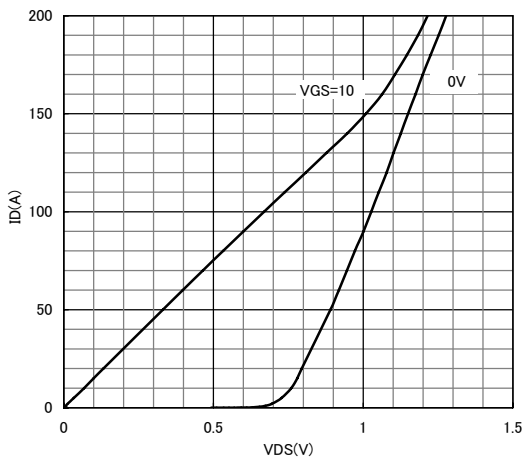
(Ta=25°C)

Characteristic	Symbol	Test Conditions	Limits			Unit
			MIN.	TYP.	MAX.	
Drain to Source breakdown Voltage	V(BR)DSS	ID=100μA, VGS=0V	50			V
Gate to Source Leakage Current	IGSS	VGS=±20V			±100	nA
Drain to Source Leakage Current	IDSS	VDS=50V, VGS=0V			100	μA
Gate Threshold Voltage	VTH	VDS=10V, ID=250μA	3.0		4.5	V
Forward Transconductance	Re(Yfs)	VDS=10V, ID=37A	30			S
Static Drain to Source On-Resistance	RDS(on)	ID=37A, VGS=10V		7	10	mΩ
Input Capacitance	Ciss	VDS=10V VGS=0V f=1MHz		3200		pF
Output Capacitance	Coss			1800		
Reverse Transfer Capacitance	Crss			750		
Turn-On Delay Time	td(on)	ID=37A, VDD≈25V RL=0.7Ω, VGS=10V RG=10Ω See Fig.2		40		ns
Rise Time	tr			280		
Turn-Off Delay Time	td(off)			130		
Fall Time	tf			120		
Total Gate Charge	Qg	ID=37A, VDD≈25V RL=0.7Ω, VGS=10V		70		nC
Gate to Source Charge	Qgs			15		
Gate to Drain Charge	Qgd			30		
Source-Drain Diode Forward Voltage	VSD	ISD=75A, VGS=0V		1.0	1.5	V

Characteristic Curves (Tc=25°C)



Characteristic Curves (T_c=25°C)

Re(y_{fs}) - I_D characteristics (typical)Capacitance—V_{DS} characteristics (typical)I_DR—V_{DS} characteristics (typical)

SAFE OPERATING AREA

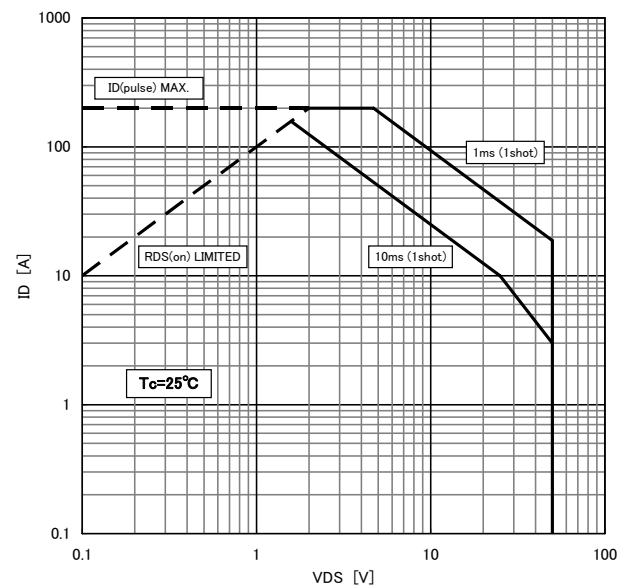
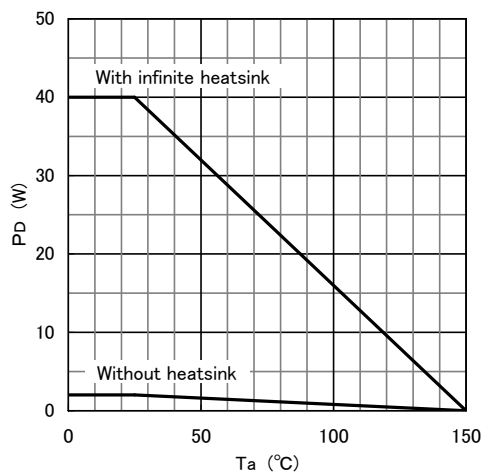
P_D — T_a characteristics

Fig.1 Unclamped Inductive Test Method

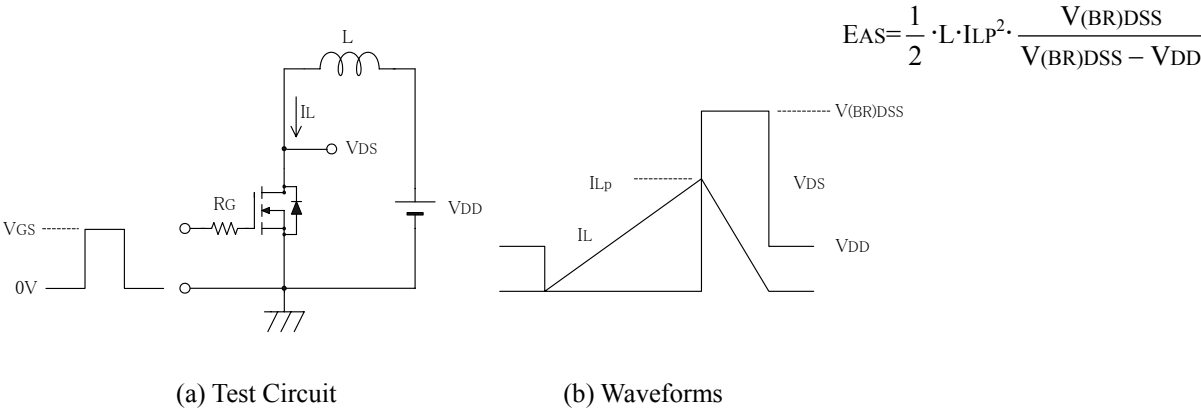
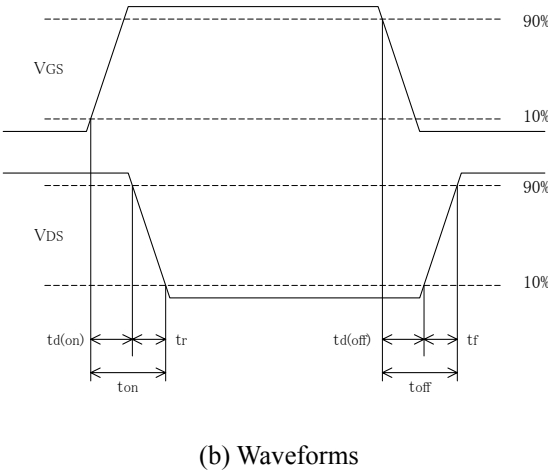
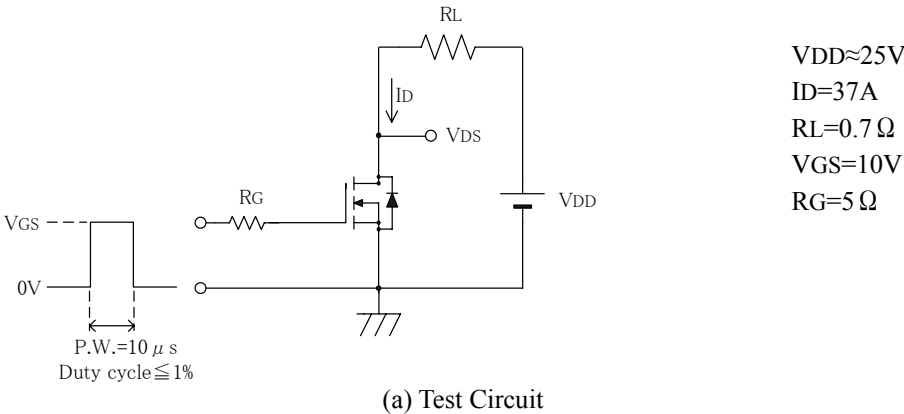
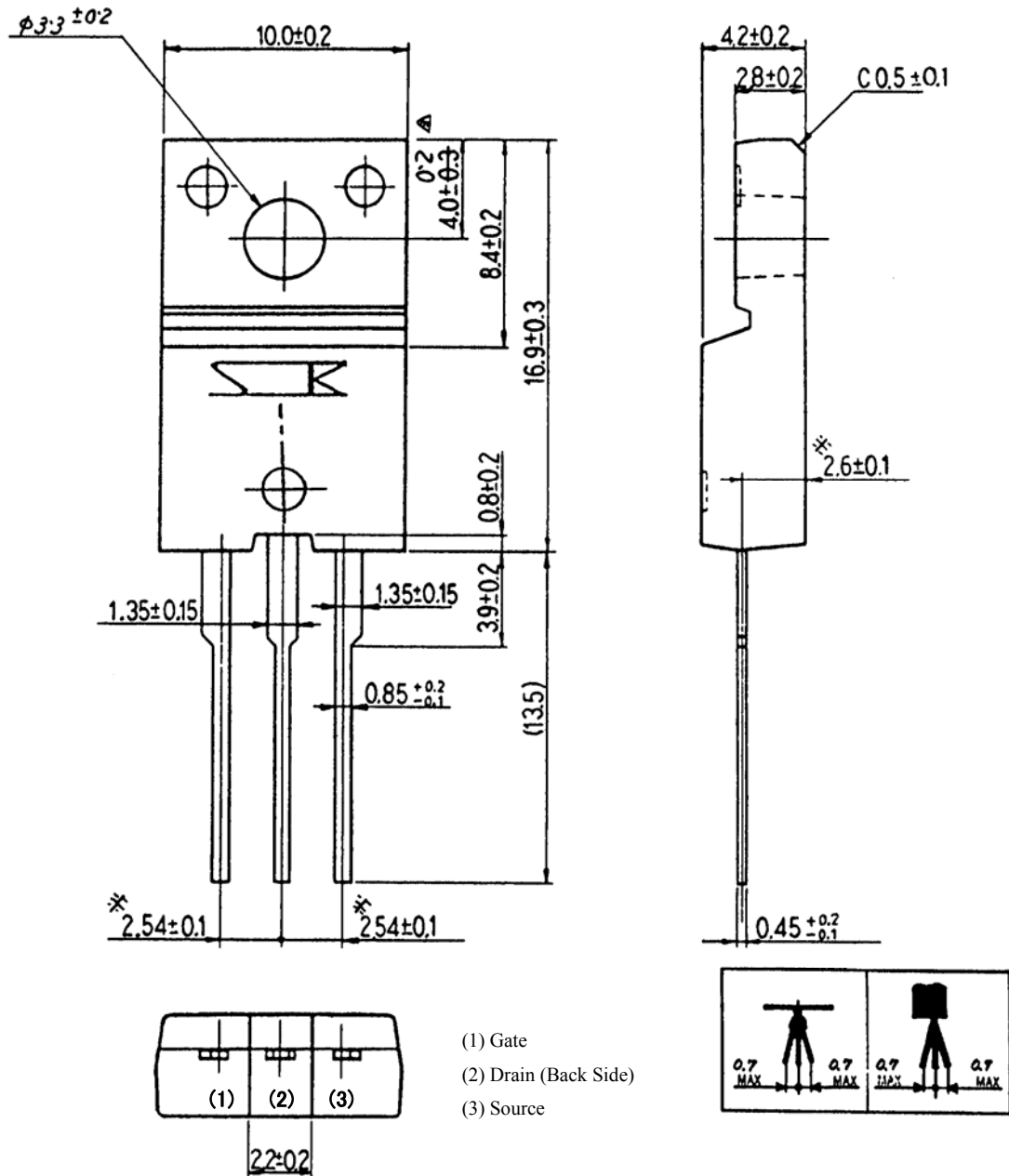


Fig.2 Switching Time Test Method



Outline

FM20 (TO220 Full Mold)



Weight Approx. 2g

<Worldwide Contacts>

Asia Pacific**China****Sanken Electric Hong Kong Co., Ltd.**

Suite 1026 Ocean Centre, Canton Road, Tsimshatsui, Kowloon, Hong Kong

Tel: 852-2735-5262

Fax: 852-2735-5494

Sanken Electric (Shanghai) Co., Ltd.

Room3202, Maxdo Centre, Xingyi Road 8, Changning district, Shanghai, China

Tel: 86-21-5208-1177

Fax: 86-21-5208-1757

India**Saket Devices Pvt. Ltd.**

Office No.13, First Floor, Bandal - Dhankude Plaza, Near PMT Depot, Paud Road, Kothrud, Pune - 411 038, India

Tel: 91-20-5621-2340

91-20-2528-5449

Fax: 91-20-2528-5459

Japan**Sanken Electric Co., Ltd. Overseas Sales Headquarters**

Metropolitan Plaza Bldg. 1-11-1 Nishi-Ikebukuro, Toshima-ku, Tokyo 171-0021, Japan

Tel: 81-3-3986-6164

Fax: 81-3-3986-8637

Korea**Sanken Electric Korea Co., Ltd.**

Mirae Asset Life Bldg. 6F, 168 Kongduk-dong, Mapo-ku, Seoul, 121-705, Korea

Tel: 82-2-714-3700

Fax: 82-2-3272-2145

Singapore**Sanken Electric Singapore Pte. Ltd.**

150 Beach Road, #14-03 The Gateway West, Singapore 189720

Tel: 65-6291-4755

Fax: 65-6297-1744

Malaysia**Sanken Electric Singapore Pte. Ltd.****Malaysia Representative Office**

Block B-20-5, Level 20, Northpoint Midvalley City, No.1, Medan Syed Putra Utara, 59200 Kuala Lumpur, Malaysia

TEL:60-3-2284-1769

FAX:60-3-2282-6345

Taiwan**Taiwan Sanken Electric Co., Ltd.**

Room 1801, 18th Floor, 88 Jung Shiau East Road, Sec. 2, Taipei 100, Taiwan R.O.C.

Tel: 886-2-2356-8161

Fax: 886-2-2356-8261

Europe

United Kingdom

Sanken Power Systems (UK) Limited

Pencoed Technology Park, Pencoed, Bridgend CF35 5HY. UK

Tel: 44-1656-869-100

Fax: 44-1656-869-162

North America

United States

Allegro MicroSystems, Inc.

115 Northeast Cutoff, Worcester, Massachusetts 01606, U.S.A.

Tel: 1-508-853-5000

Fax: 1-508-853-3353

Allegro MicroSystems, Inc. (Southern California)

14 Hughes Street, Suite B105, Irvine, CA 92618

Tel: 1-949-460-2003

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