

FKP252

December, 2005

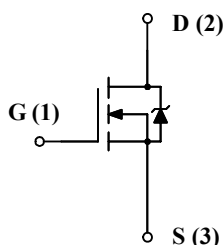
■Features

- Low on-resistance
- Low input capacitance
- Avalanche energy capability guaranteed

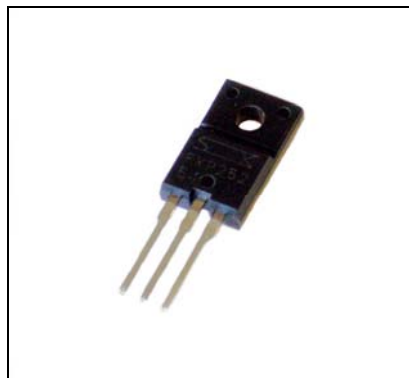
■Applications

- PDP driving
- High speed switching

■Equivalent circuit



■Package---TO220F

Absolute maximum ratings

(Ta=25°C)

Characteristic	Symbol	Rating	Unit
Drain to Source Voltage	VDSS	250	V
Gate to Source Voltage	VGSS	±30	V
Continuous Drain Current	ID	±25A	A
Pulsed Drain Current	ID(pulse) *1	±100A	A
Maximum Power Dissipation	PD	40 (Tc=25°C)	W
Single Pulse Avalanche Energy	EAS *2	200	mJ
Avalanche Current	IAS	25	A
Channel Temperature	Tch	150	°C
Storage Temperature	Tstg	-55 to 150	°C

*1 PW≤100μsec, duty cycle≤1%

*2 VDD=20V, L=590μH, ILp=25A, unclamped, RG=50Ω, See Fig.1

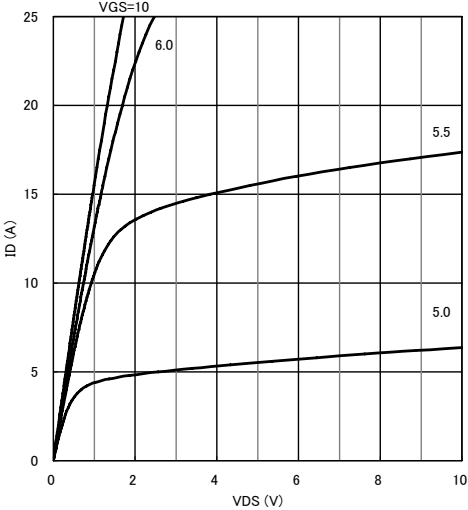
Electrical characteristics

(Ta=25°C)

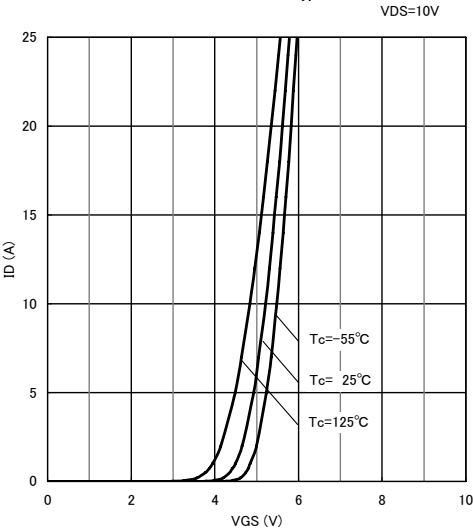
Characteristic	Symbol	Test Conditions	Limits			Unit
			MIN.	TYP.	MAX.	
Drain to Source breakdown Voltage	V(BR)DSS	ID=100μA, VGS=0V	250			V
Gate to Source Leakage Current	IGSS	VGS=±30V			±100	nA
Drain to Source Leakage Current	IDSS	VDS=250V, VGS=0V			100	μA
Gate Threshold Voltage	VTH	VDS=10V, ID=1mA	3.0		4.5	V
Forward Transconductance	Re(Yfs)	VDS=10V, ID=12A	13	21		S
Static Drain to Source On-Resistance	RDS(ON)	ID=12A, VGS=10V		68	75	mΩ
Input Capacitance	Ciss	VDS=25V		2000		pF
Output Capacitance	Coss	VGS=0V		330		
Reverse Transfer Capacitance	Crss	f=1MHz		70		
Turn-On Delay Time	td(on)	ID=12A, VDD≈120V		30		ns
Rise Time	tr	RL=10Ω, VGS=10V		50		
Turn-Off Delay Time	td(off)	Rg=5Ω		100		
Fall Time	tf	See Fig.2		40		
Source-Drain Diode Forward Voltage	VSD	ISD=25A, VGS=0V		0.9	1.5	V
Gate Threshold Voltage Temp. Coefficient	ΔVTH / ΔTch	VDS=10V, ID=1mA		-8		mV/°C

Characteristic Curves (Tc=25°C)

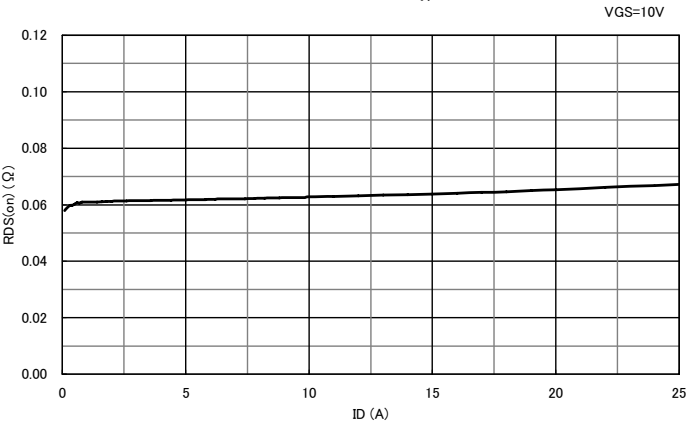
ID-VDS Characteristics (typical)



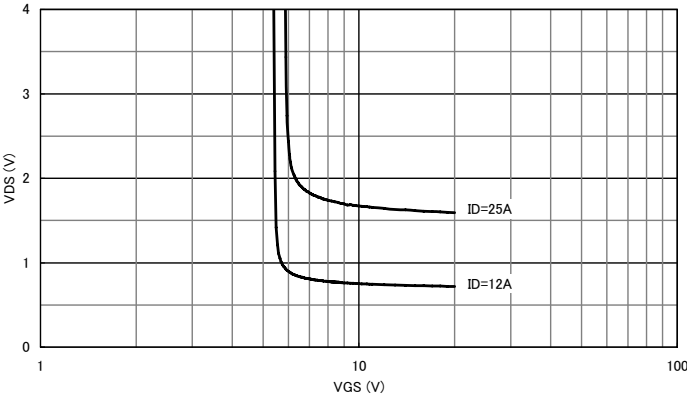
ID-VGS Characteristics (typical)



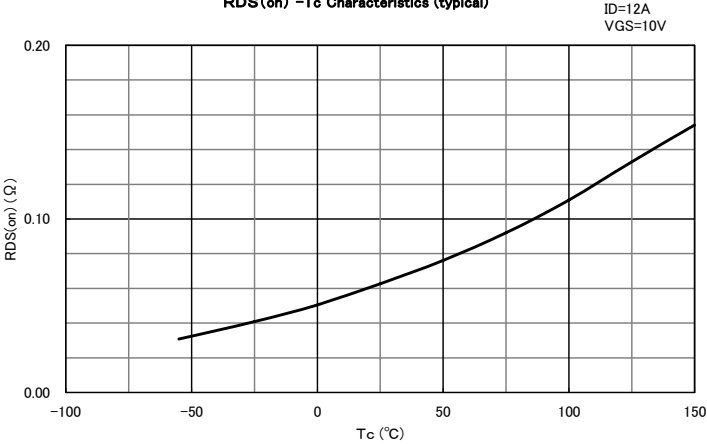
RDS(on)-ID Characteristics (typical)



VDS-VGS Characteristics (typical)



RDS(on) -Tc Characteristics (typical)



Characteristic Curves (T_c=25°C)

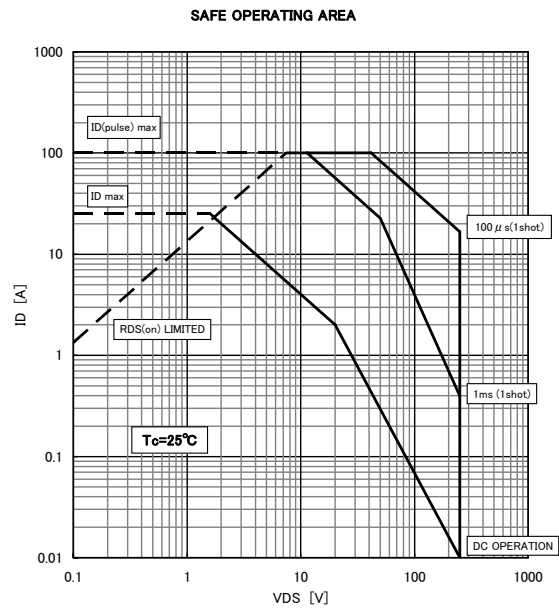
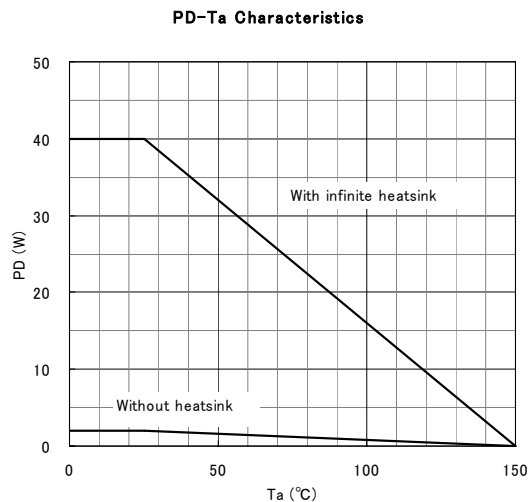
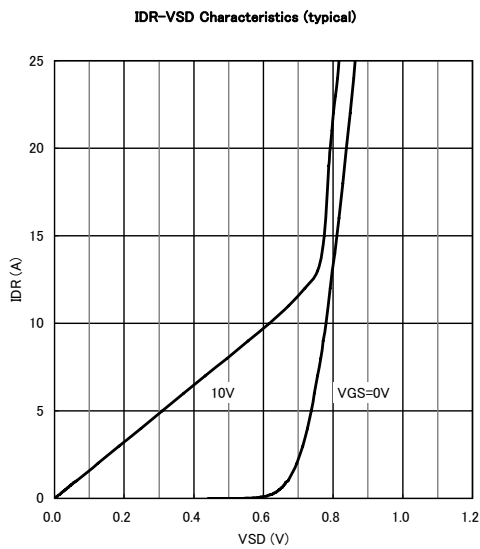
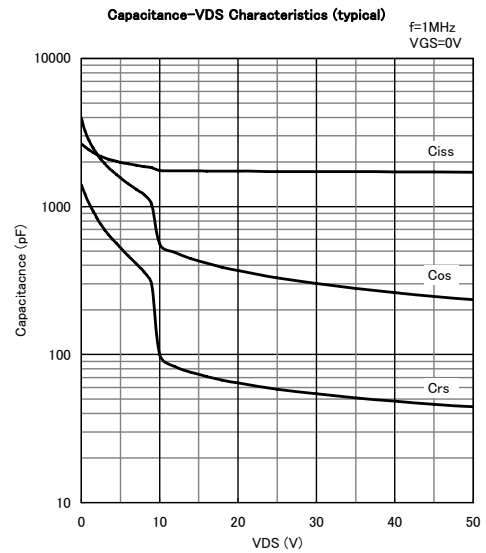
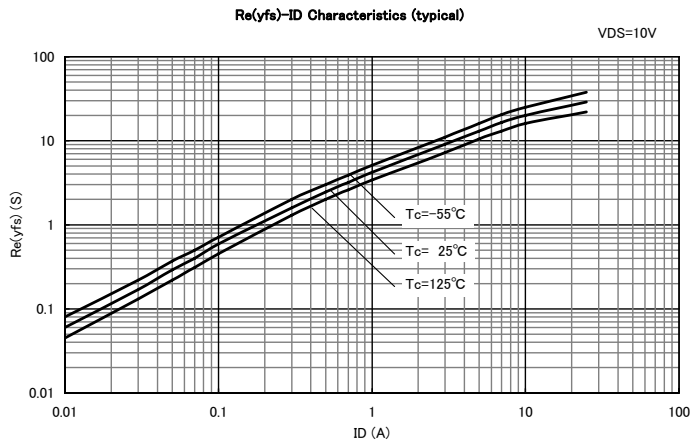


Fig.1 Unclamped Inductive Test Method (for Avalanche energy capability)

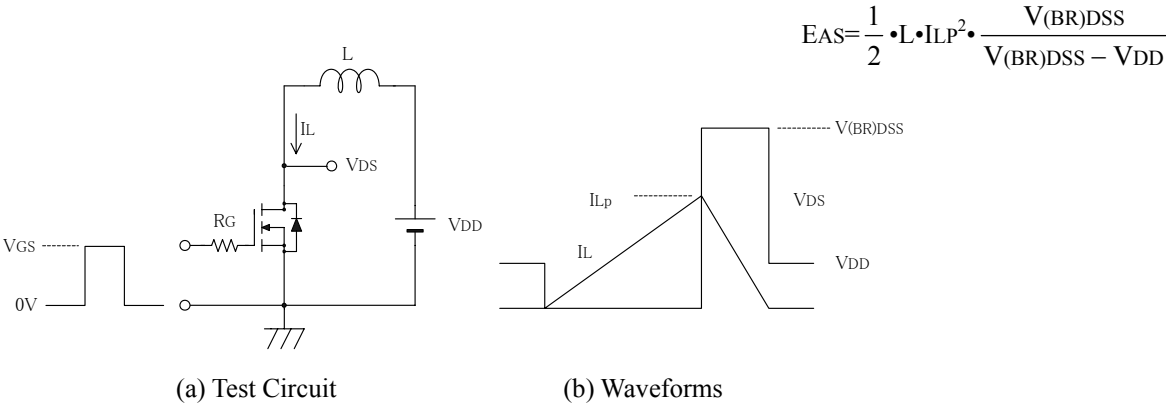
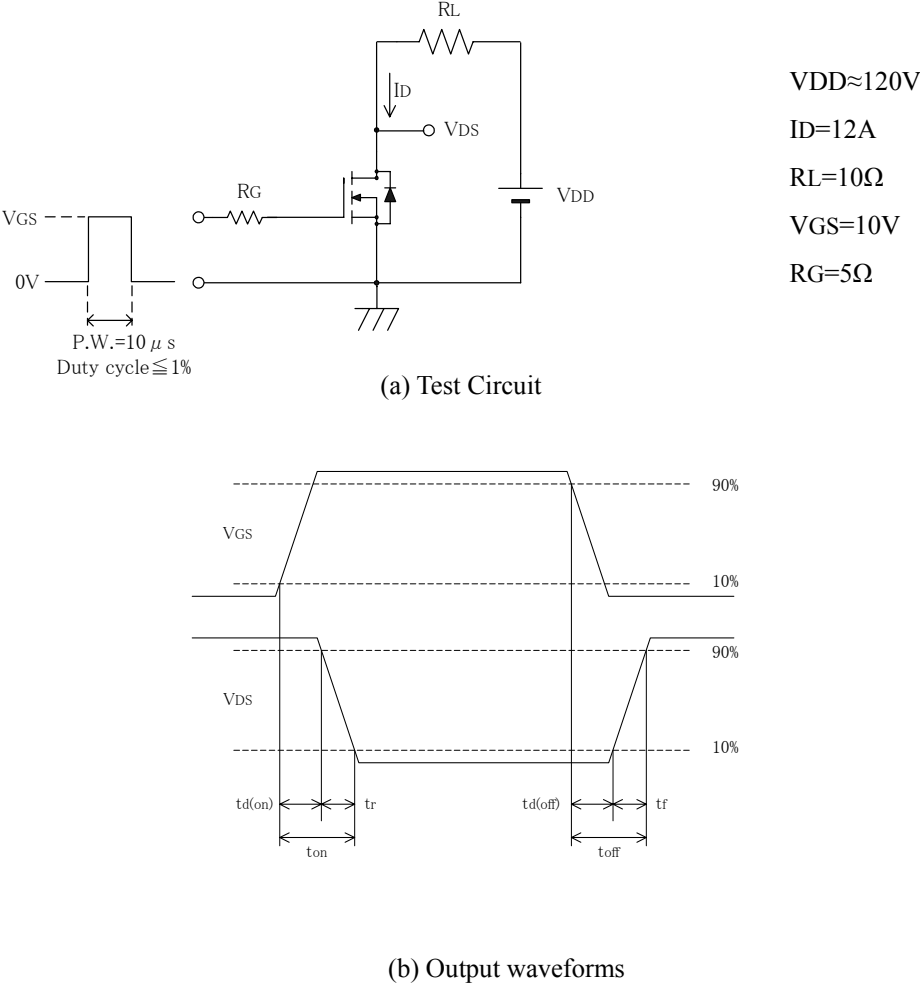
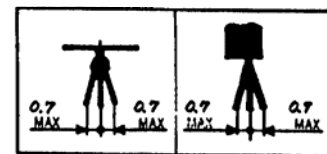
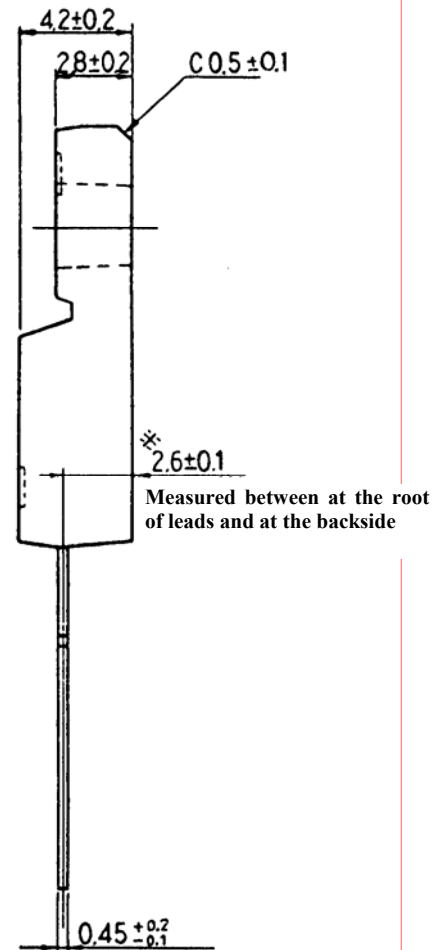
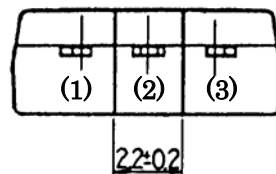


Fig.2 Switching Time Test Method



FM20 (TO220 Full Mold)



Side view

Mass: 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

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

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

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

Fax: 1-949-460-7837

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