

## FKP252

December, 2005

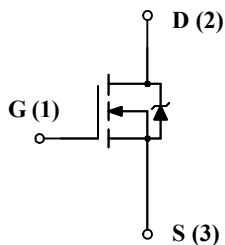
## ■Features

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

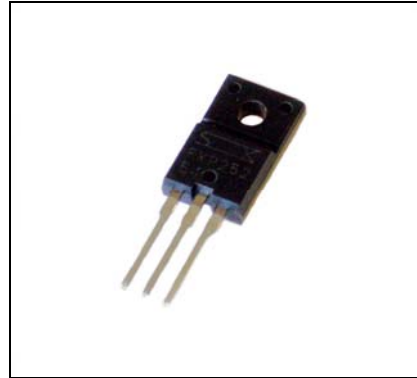
## ■Applications

- 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) <sup>*1</sup>	±100A	A
Maximum Power Dissipation	PD	40 (Tc=25°C)	W
Single Pulse Avalanche Energy	EAS <sup>*2</sup>	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

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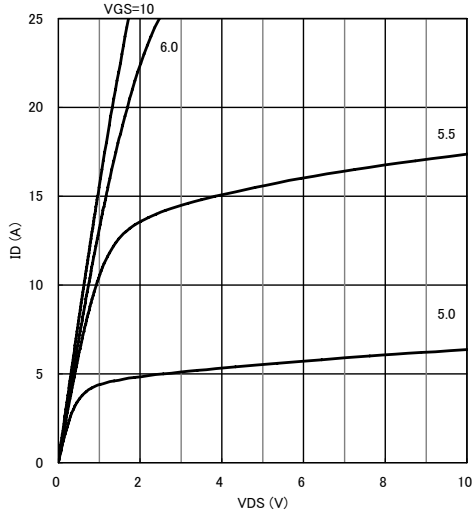
**Electrical characteristics**

(Ta=25°C)

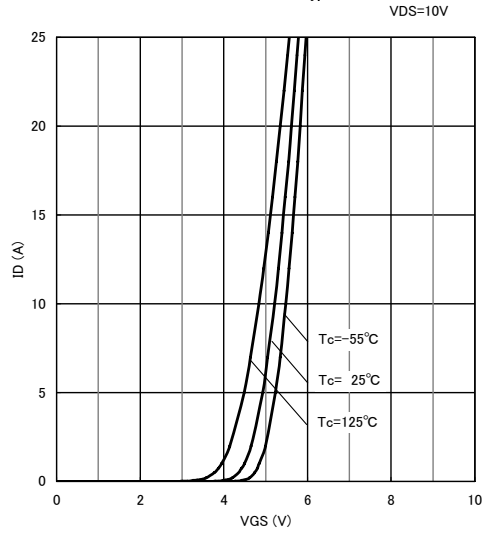
Characteristic	Symbol	Test Conditions	Limits			Unit
			MIN.	TYP.	MAX.	
Drain to Source breakdown Voltage	V(BR)DSS	ID=100μA, VGS=0V	250			V
Gate to Source Leakage Current	IGSS	VGS=±30V			±100	nA
Drain to Source Leakage Current	IDSS	VDS=250V, VGS=0V			100	μA
Gate Threshold Voltage	VTH	VDS=10V, ID=1mA	3.0		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)

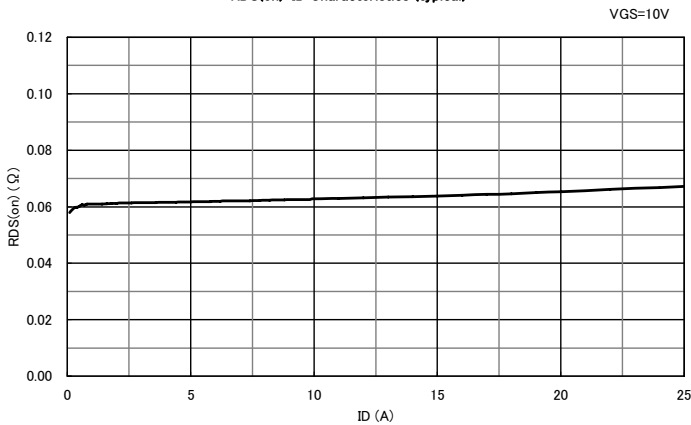
**ID-VDS Characteristics (typical)**



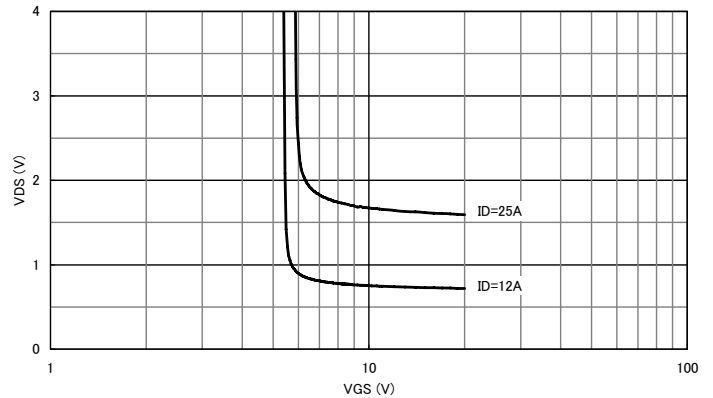
**ID-VGS Characteristics (typical)**



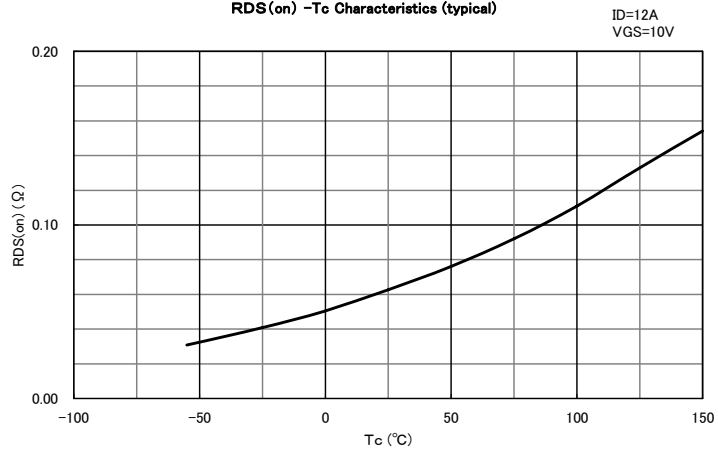
**RDS(on)-ID Characteristics (typical)**



**VDS-VGS Characteristics (typical)**



**RDS(on) -Tc Characteristics (typical)**



## Characteristic Curves (Tc=25°C)

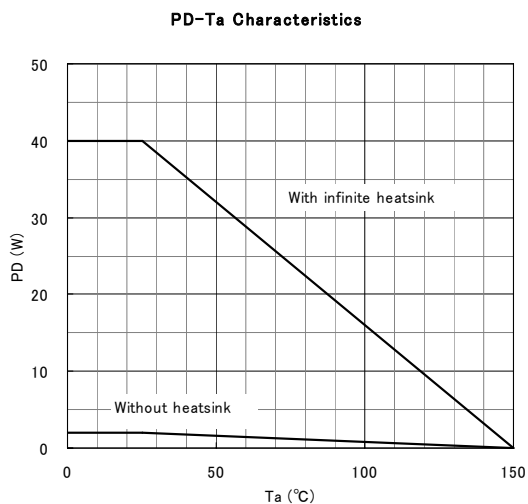
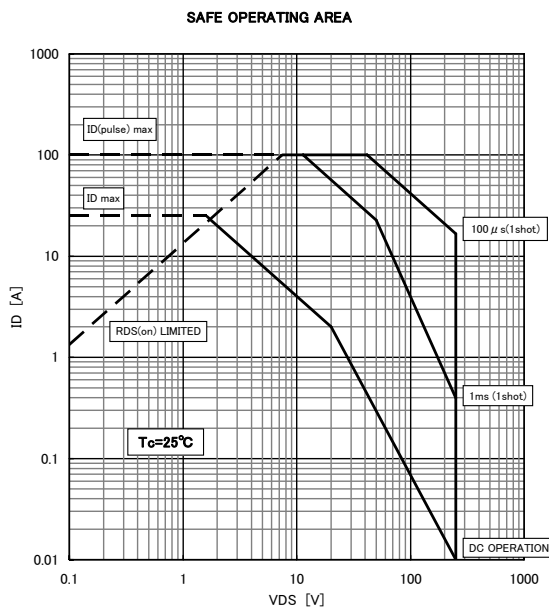
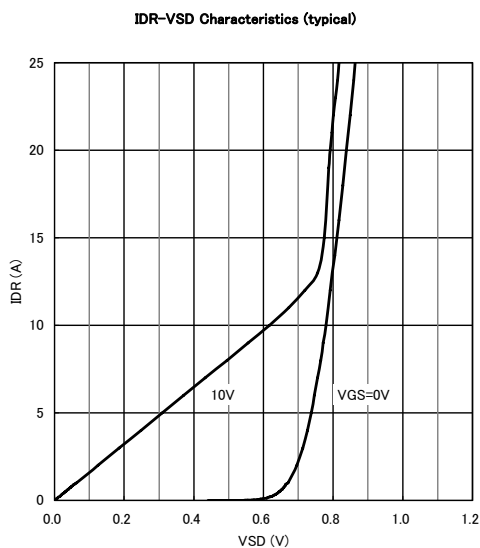
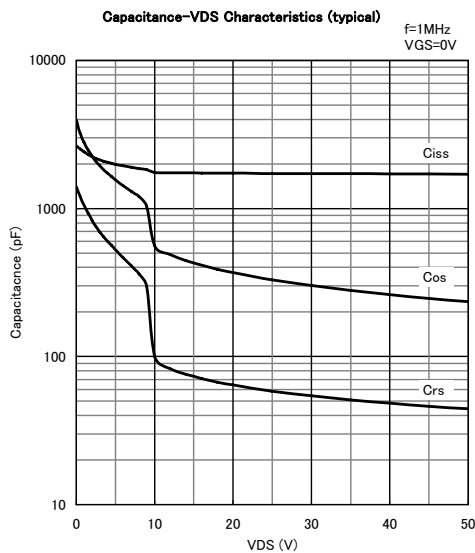
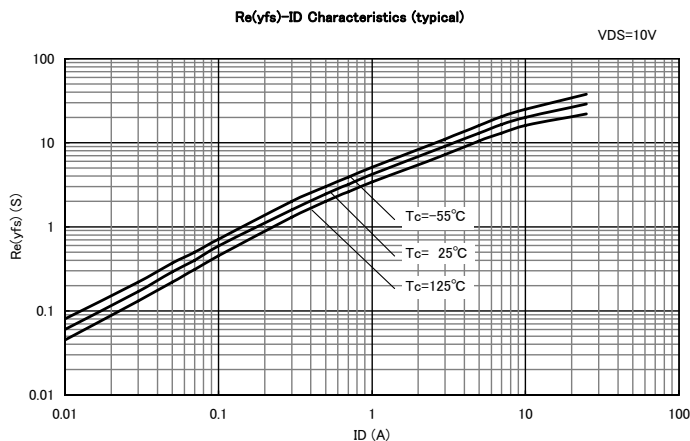


Fig.1 Unclamped Inductive Test Method (for Avalanche energy capability)

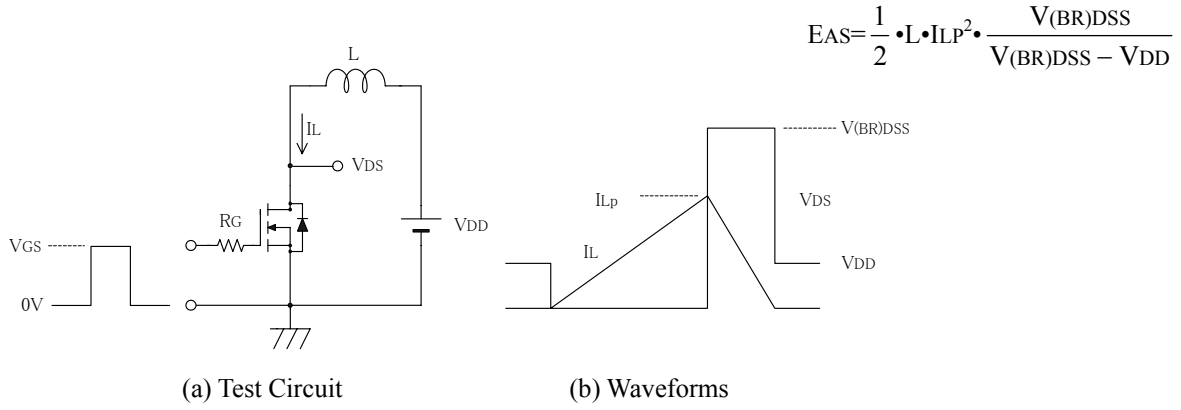
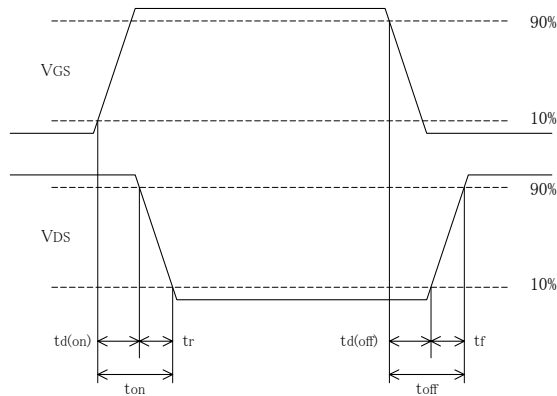
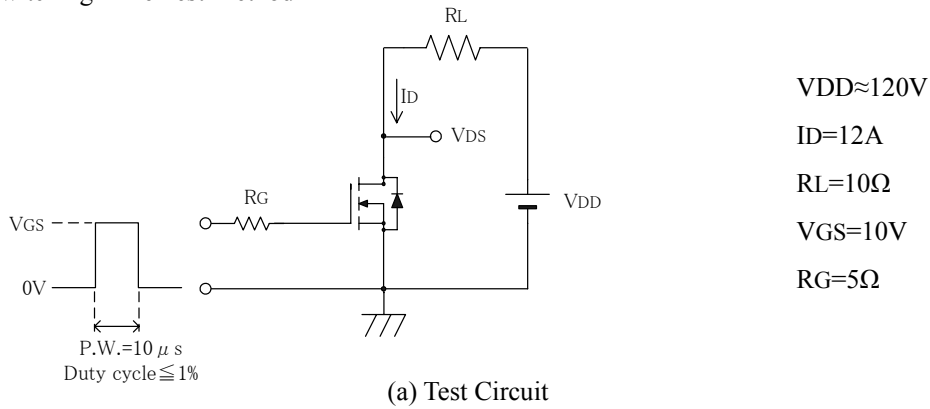


Fig.2 Switching Time Test Method



(b) Output waveforms



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