

FKP253

June, 2007

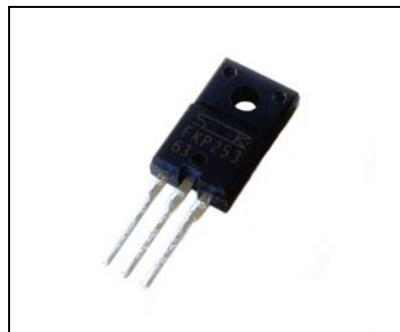
■Features

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

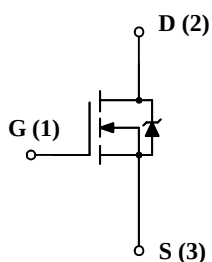
■Applications

- PDP driving
- High speed switching

■Package---FM20 (TO220 Full Mold)



■Equivalent circuit



■Absolute maximum ratings

(Ta=25°C)

Parameter	Symbol	Rating	Unit
Drain to Source Voltage	VDSS	250	V
Gate to Source Voltage	VGSS	±30	V
Continuous Drain Current	ID	±20A	A
Pulsed Drain Current	ID(pulse) * ¹	±80A	A
Maximum Power Dissipation	PD	40 (Tc=25°C)	W
Single Pulse Avalanche Energy	EAS * ²	160	mJ
Avalanche Current	IAS	20	A
Channel Temperature	Tch	150	°C
Storage Temperature	Tstg	—55 to 150	°C

*1 PW≤100μs, duty cycle≤1%

*2 VDD=20V, L=740μH, ILp=20A, unclamped, RG=50Ω, See Fig.1

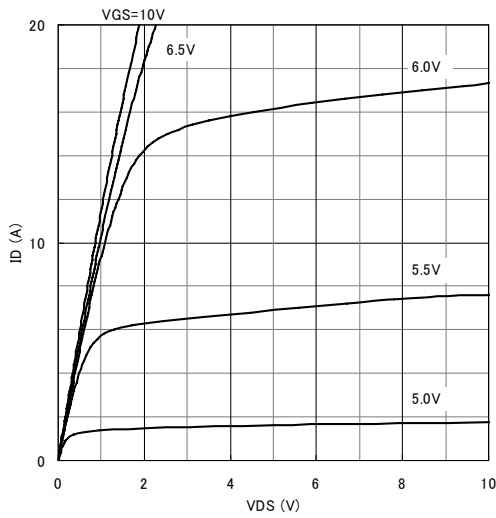
Electrical characteristics

(Ta=25°C)

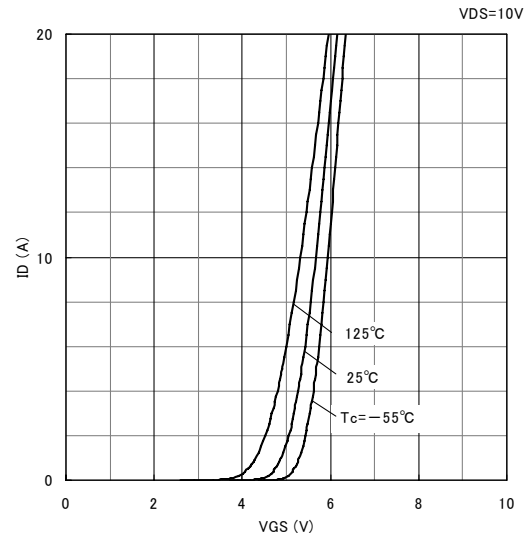
Parameter	Symbol	Test Conditions	Limits			Unit
			MIN.	TYP.	MAX.	
Drain to Source breakdown Voltage	V(BR)DSS	ID=100 μ A, VGS=0V	250			V
Gate to Source Leakage Current	IGSS	VGS=±30V			±100	nA
Drain to Source Leakage Current	IDSS	VDS=250V, VGS=0V			100	μ A
Gate Threshold Voltage	VTH	VDS=10V, ID=1mA	3.0		4.5	V
Forward Transconductance	Re(Yfs)	VDS=10V, ID=10A	8	17		S
Static Drain to Source On-Resistance	RDS(on)	ID=10A, VGS=10V		86	95	m Ω
Input Capacitance	Ciss	VDS=25V VGS=0V f=1MHz		1600		pF
Output Capacitance	Coss			280		
Reverse Transfer Capacitance	Crss			50		
Turn-On Delay Time	td(on)	ID=10A, VDD≈120V RL=12 Ω , VGS=10V RG=5 Ω See Fig.2		30		ns
Rise Time	tr			60		
Turn-Off Delay Time	td(off)			80		
Fall Time	tf			45		
Source-Drain Diode Forward Voltage	VSD	ISD=20A, VGS=0V		1.0	1.5	V
Source-Drain Diode Reverse Recovery Time	trr	ISD=20A, VGS=0V di/dt=100A/ μ s		140		ns

Characteristic Curves (Tc=25°C)

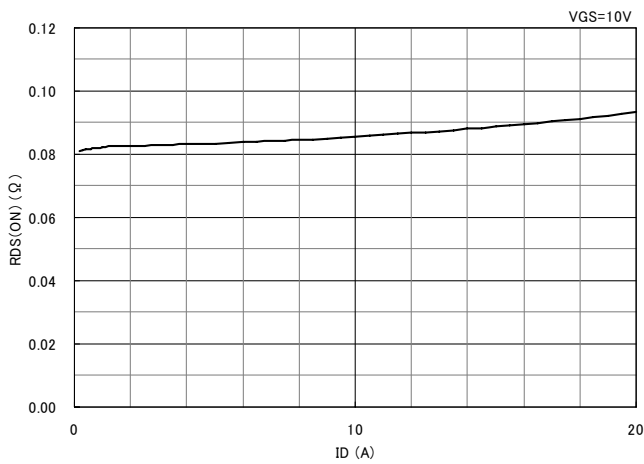
ID-VDS Characteristics (typical)



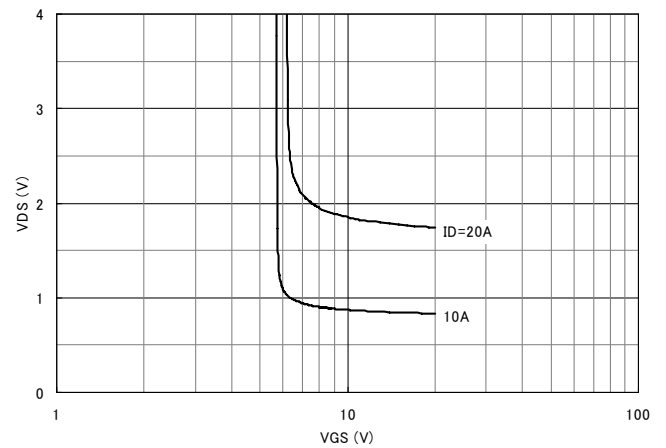
ID-VGS Characteristics (typical)



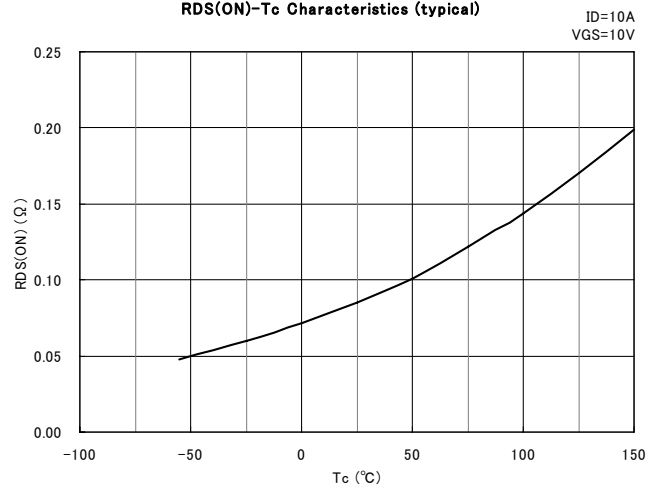
RDS(ON)-ID Characteristics (typical)



VDS-VGS Characteristics (typical)



RDS(ON)-Tc Characteristics (typical)



Characteristic Curves (Tc=25°C)

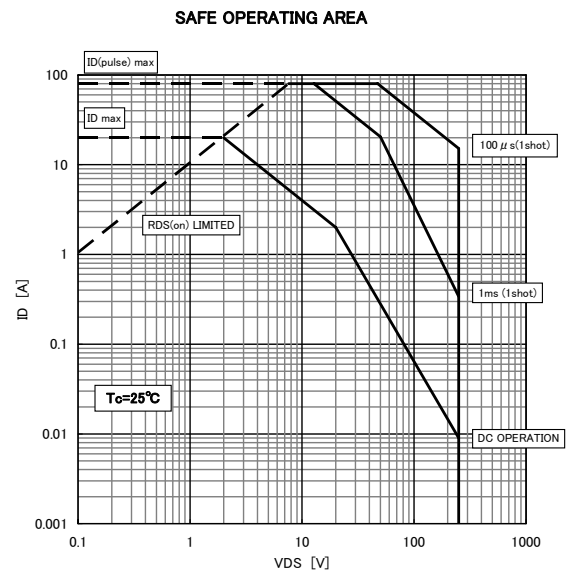
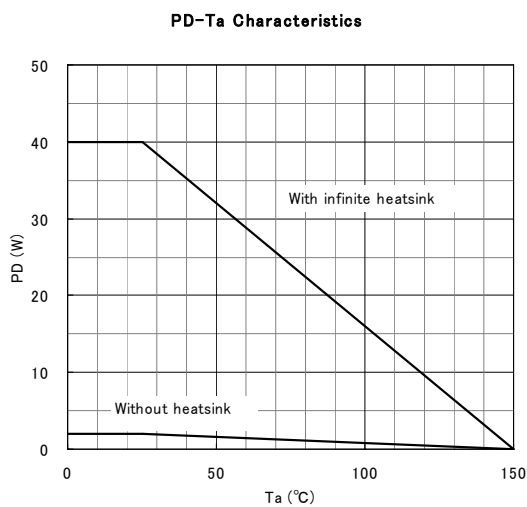
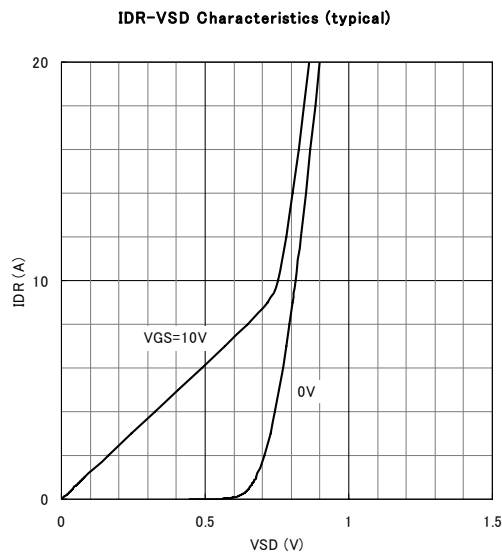
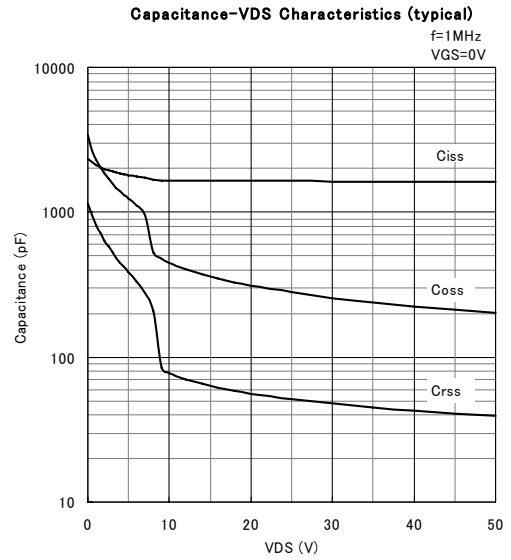
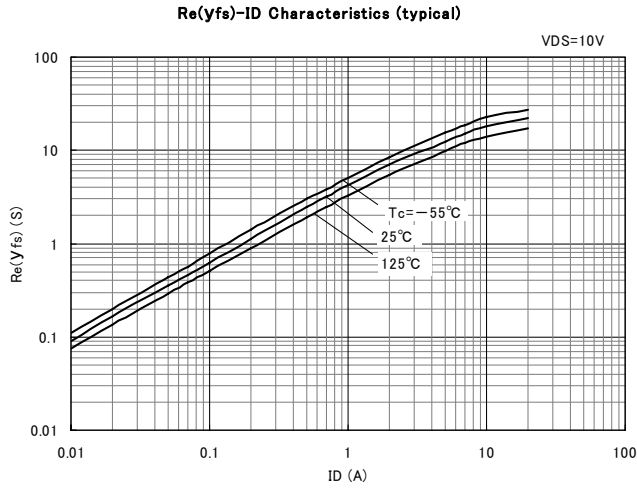


Fig.1 Unclamped Inductive Test Method

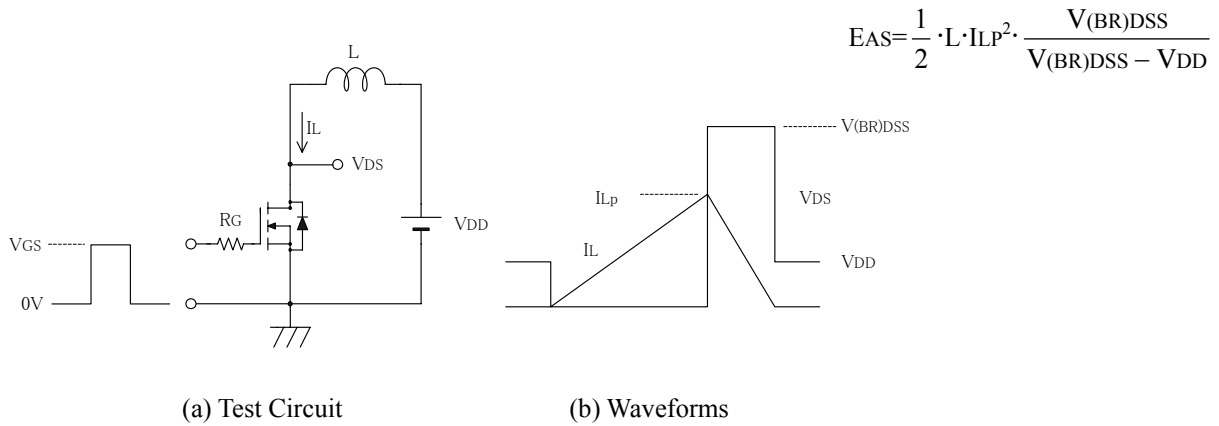
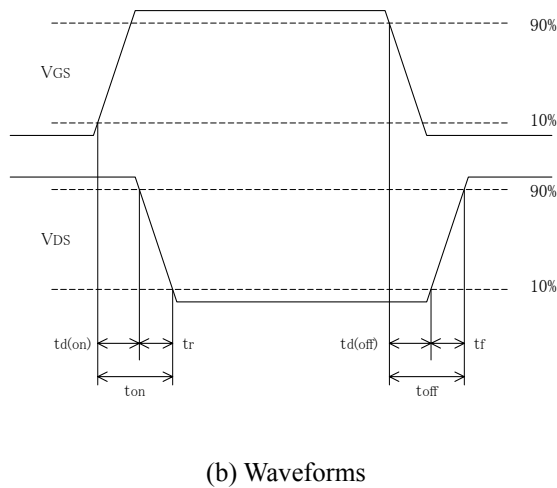
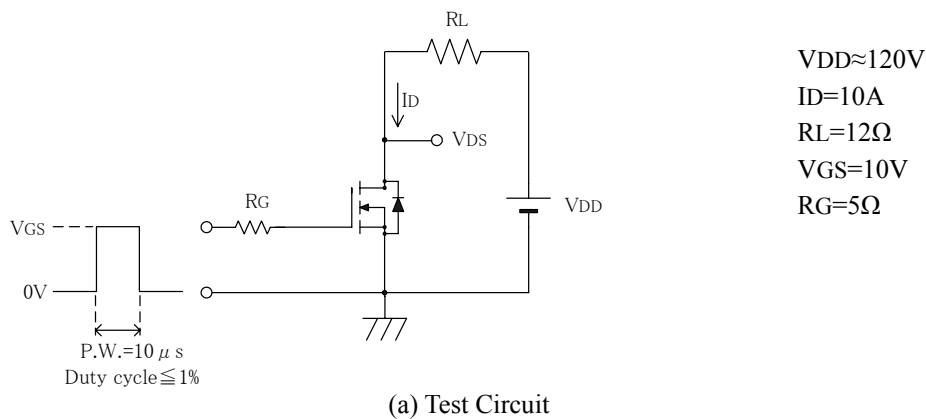
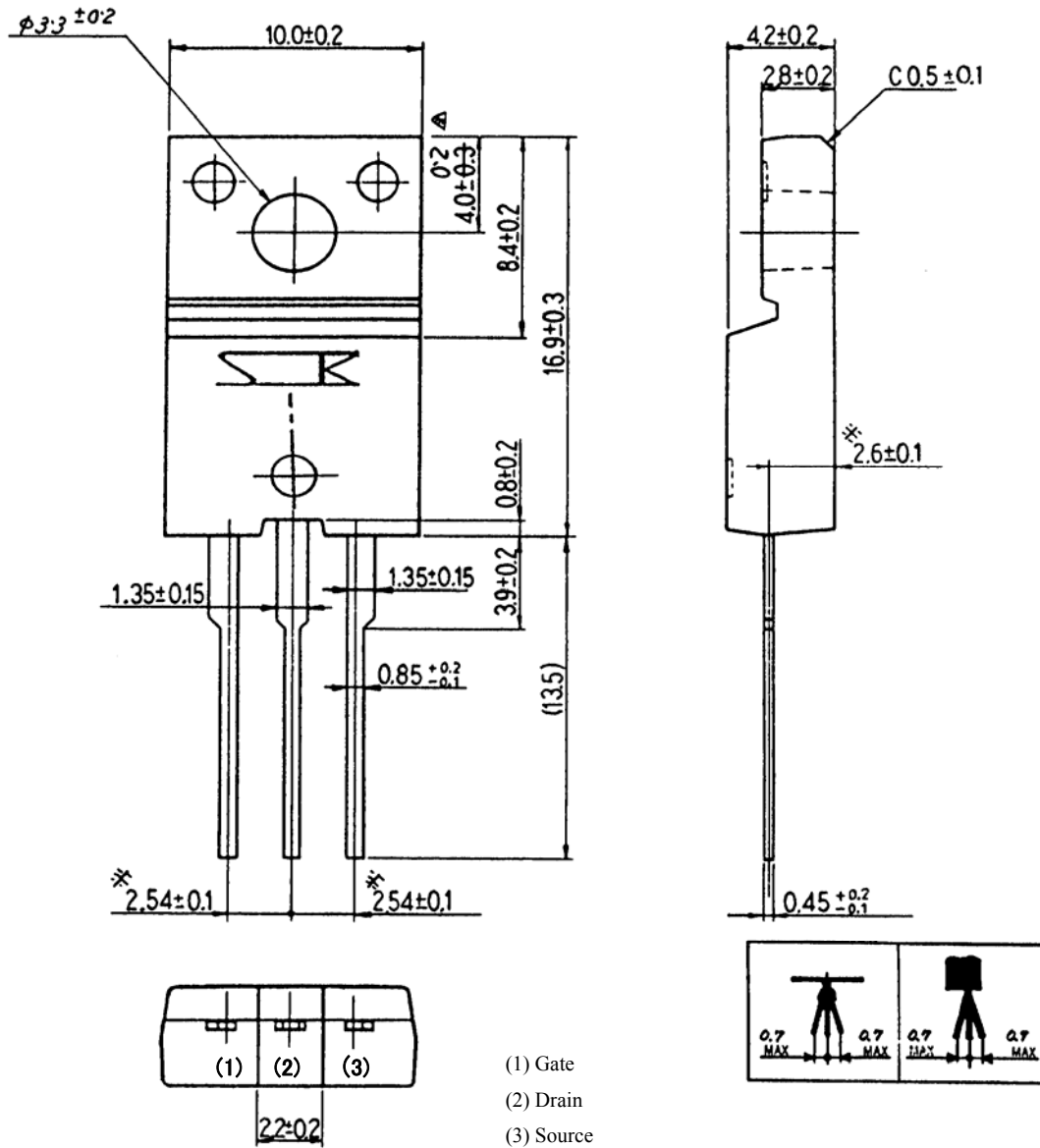


Fig.2 Switching Time Test Method



External dimensions

FM20 (TO220 Full Mold)



Weight Approx. 2g

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