

# N-Channel MOS FET

## FKP330C

July, 2007

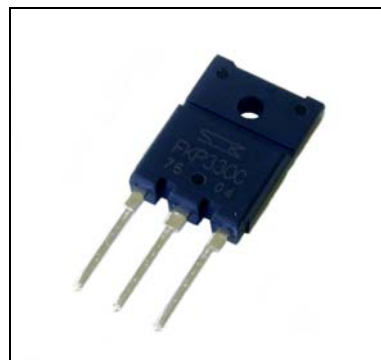
### ■Features

- Low on-resistance
- Low input capacitance
- Avalanche energy guarantee

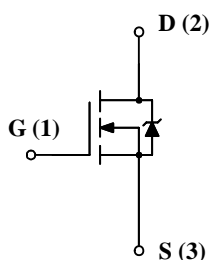
### ■Applications

- PDP driving
- High speed switching

### ■Package---FM100 (TO-3P Full Mold)



### ■Equivalent circuit



### ■Absolute maximum ratings

(Ta=25°C)

Characteristic	Symbol	Rating	Unit
Drain to Source Voltage	VDSS	330	V
Gate to Source Voltage	VGSS	±30	V
Continuous Drain Current	ID	±30A	A
Pulsed Drain Current	ID(pulse) <sup>1)</sup>	±120A	A
Maximum Power Dissipation	PD	85 (Tc=25°C)	W
Single Pulse Avalanche Energy	EAS <sup>2)</sup>	500	mJ
Avalanche Current	IAS	30	A
Channel Temperature	Tch	150	°C
Storage Temperature	Tstg	-55~150	°C

1) PW≤100μs, duty cycle≤1%

2) VDD=20V, L=1mH, ILp=30A, 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	330			V
Gate to Source Leakage Current	IGSS	VGS=±30V			±100	nA
Drain to Source Leakage Current	IDSS	VDS=330V, VGS=0V			100	μA
Gate Threshold Voltage	VTH	VDS=10V, ID=1mA	3.0		4.5	V
Forward Transconductance	Re(Yfs)	VDS=10V, ID=15A	23	37		S
Static Drain to Source On-Resistance	RDS(on)	ID=15A, VGS=10V		50	63	mΩ
Input Capacitance	Ciss	VDS=25V VGS=0V f=1MHz		4600		pF
Output Capacitance	Coss			620		
Reverse Transfer Capacitance	Crss			220		
Turn-On Delay Time	td(on)	ID=15A, VDD≈165V RL=11Ω, VGS=10V RG=5Ω See Fig.2		50		ns
Rise Time	tr			60		
Turn-Off Delay Time	td(off)			110		
Fall Time	tf			30		
Source-Drain Diode Forward Voltage	VSD	ISD=30A, VGS=0V		1.0	1.5	V
Gate Threshold Voltage Temp. Coefficient	$\frac{\Delta V_{TH}}{\Delta T_{ch}}$	VDS=10V, ID=1mA		-11		mV/°C

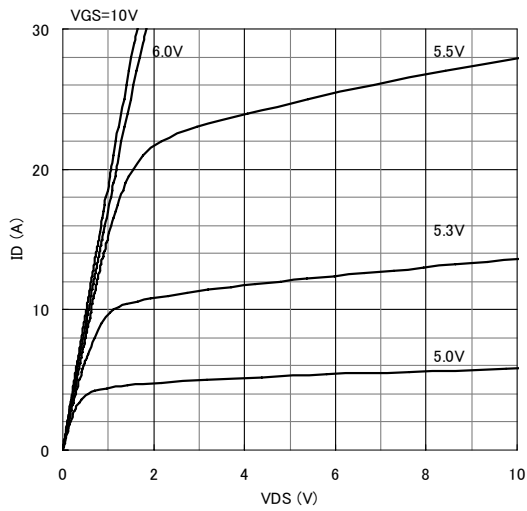
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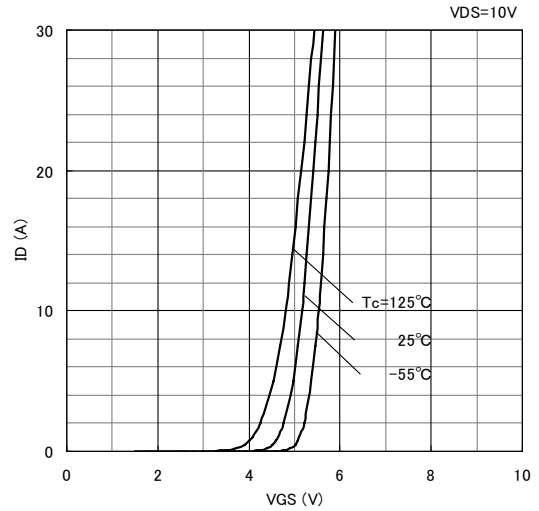
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### Characteristic Curves (Tc=25°C)

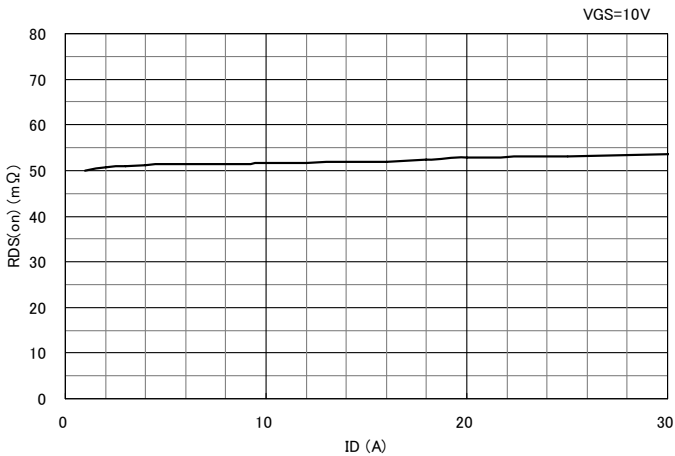
**ID-VDS Characteristics (typical)**



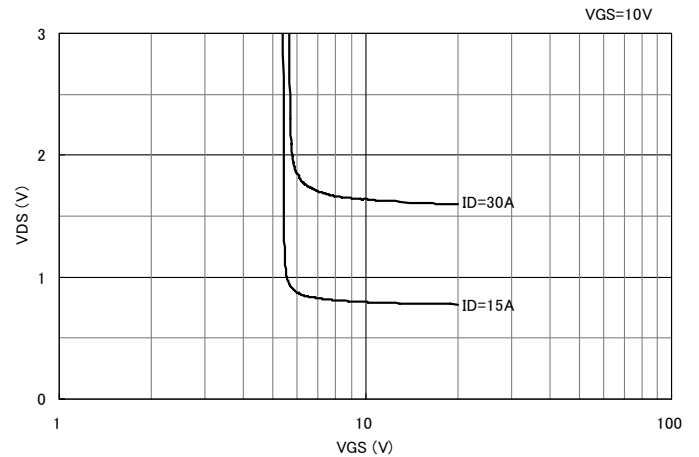
**ID-VGS Characteristics (typical)**



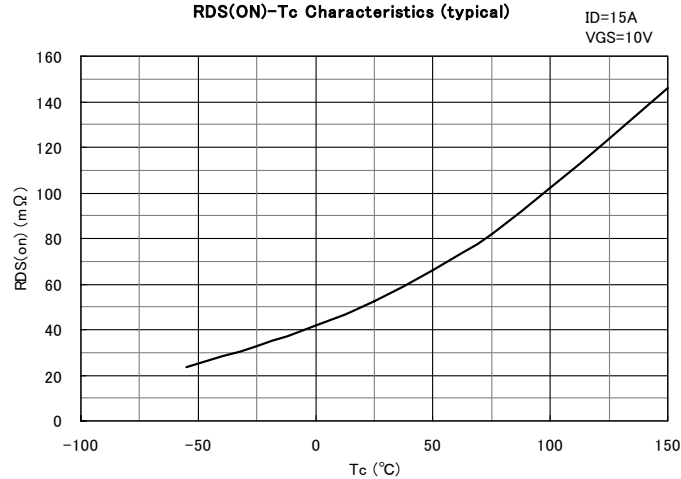
**RDS(ON)-ID Characteristics (typical)**



**VDS-VGS Characteristics (typical)**



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

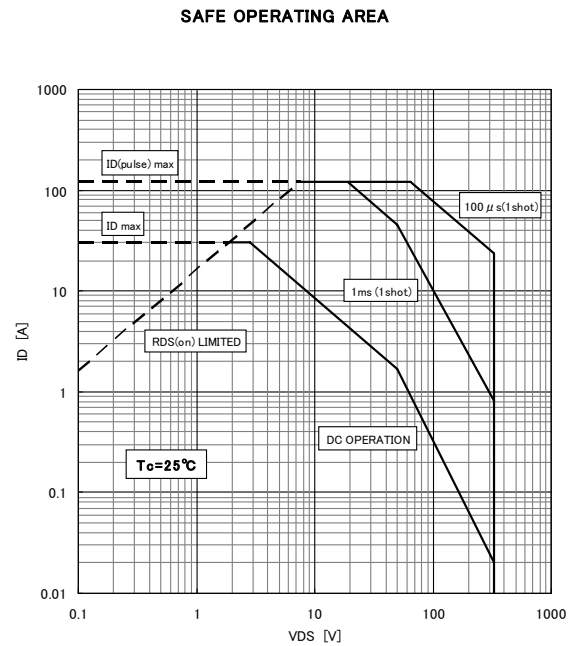
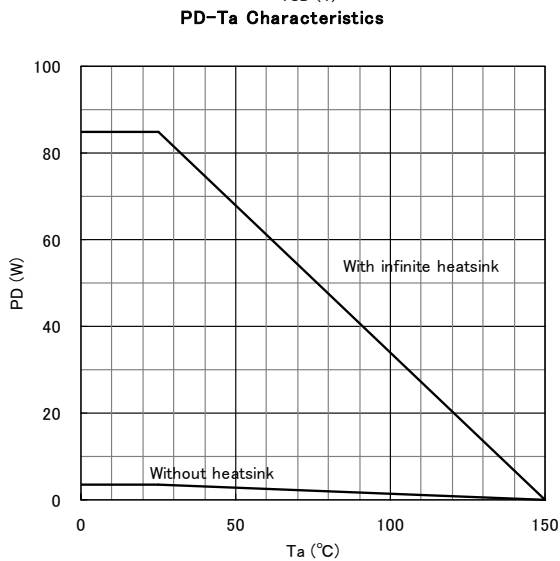
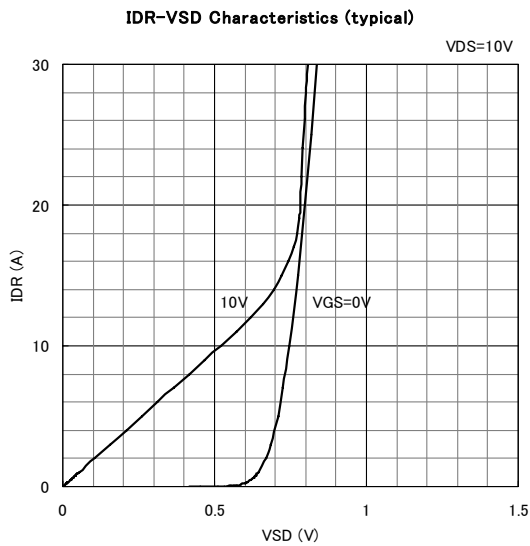
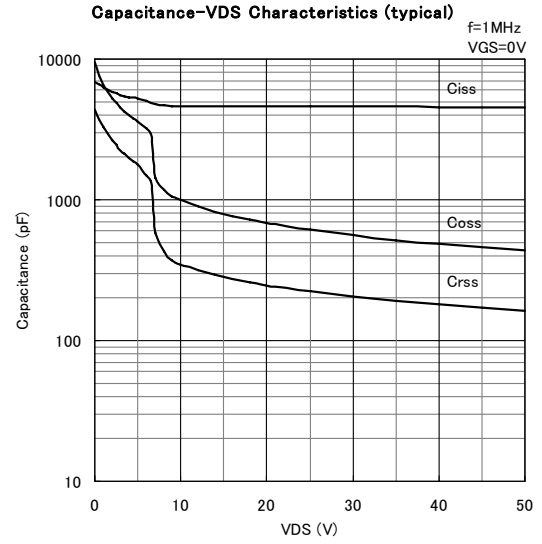
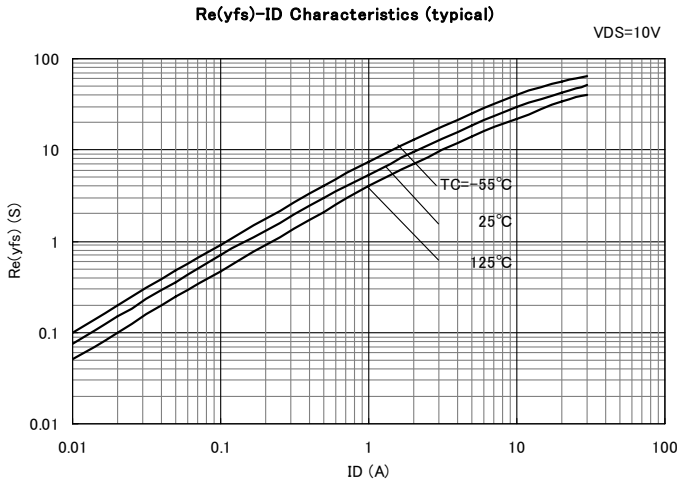


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### Characteristic Curves (Tc=25°C)



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Fig.1 Unclamped Inductive Test Method

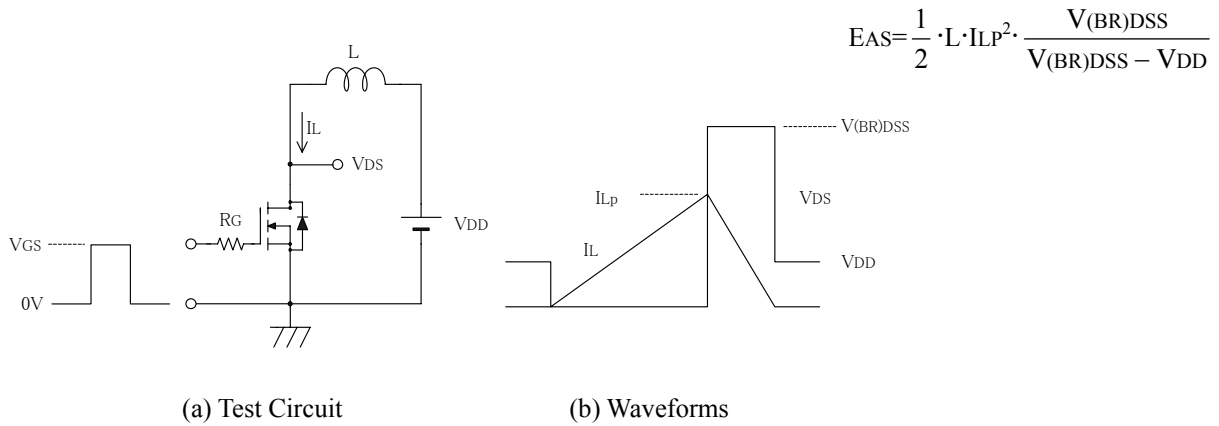
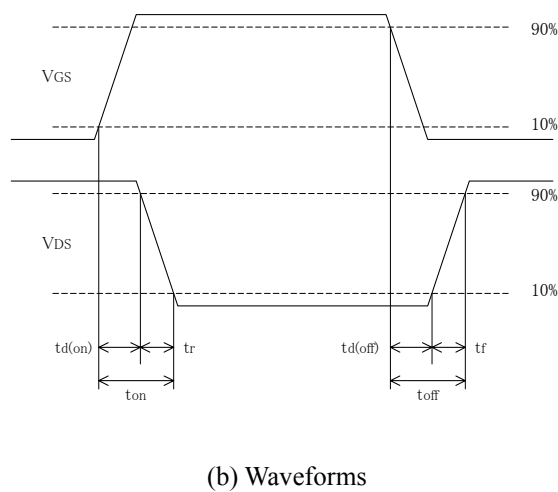
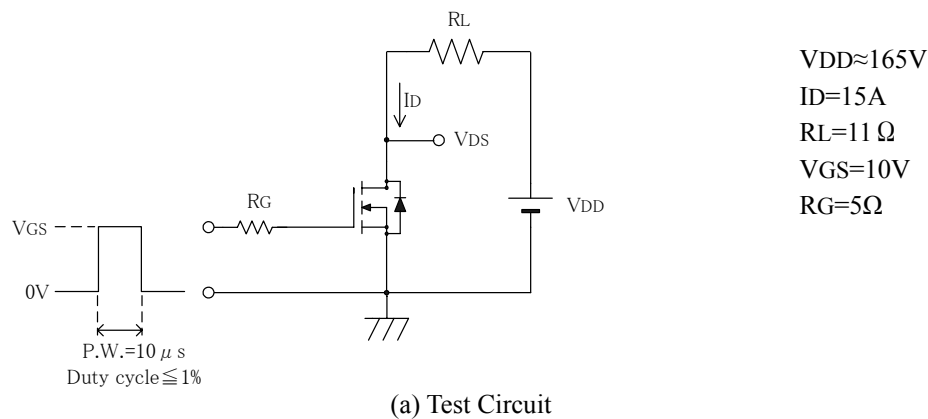


Fig.2 Switching Time Test Method



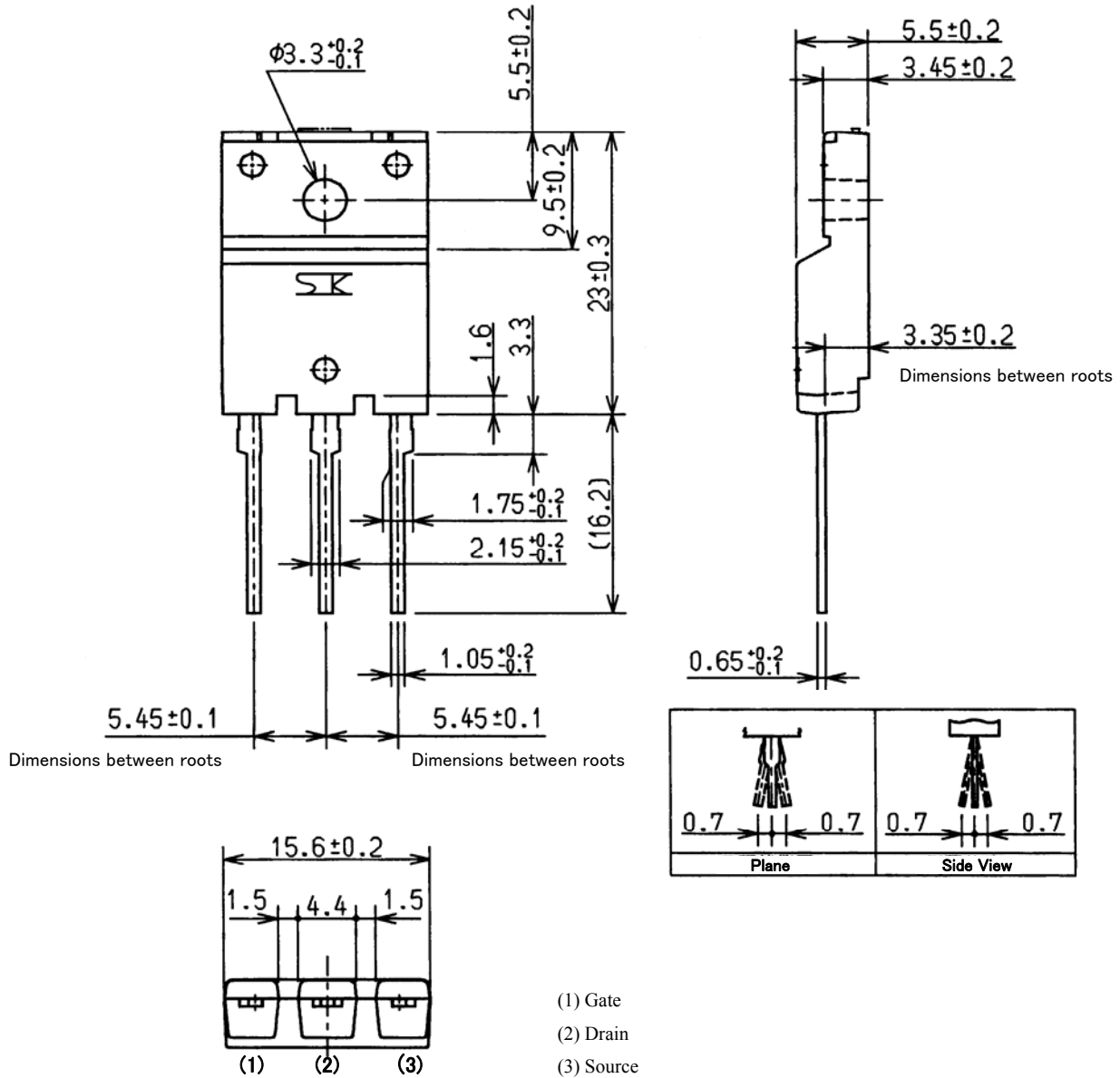
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### Outline

FM100 (TO-3P Full Mold)



Weight Approx. 6.5g

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