

این دیتاشیت توسط توکل الکترونیک تهیه و ارائه شده است.

جهت مشاهده قیمت، موجودی و ثبت سفارش این قطعه به وبسایت توکل الکترونیک مراجعه فرمایید.



مشاهده قیمت و خرید
برای خرید و مشاهده سایر محصولات کلیک کنید



KEC

SEMICONDUCTOR
TECHNICAL DATAKF4N65FM
N CHANNEL MOS FIELD
EFFECT TRANSISTOR

General Description

This planar stripe MOSFET has better characteristics, such as fast switching time, low on resistance, low gate charge and excellent avalanche characteristics. It is mainly suitable for active power factor correction and switching mode power supplies.

FEATURES

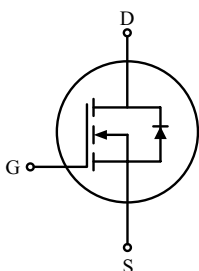
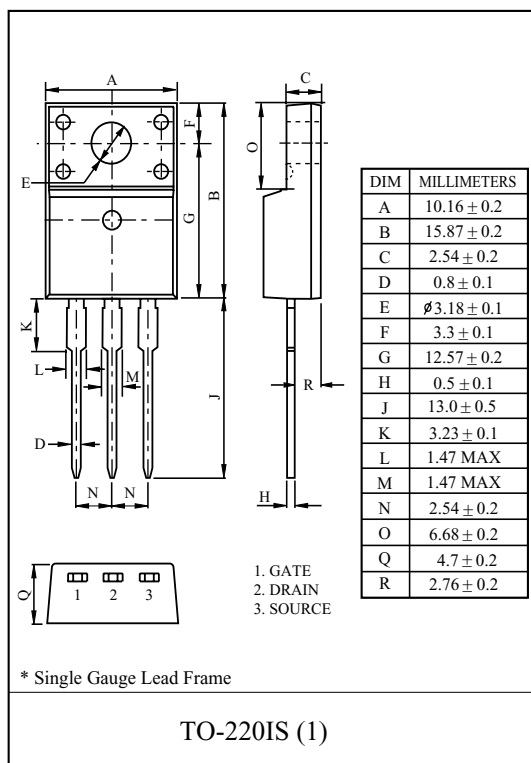
- $V_{DS}=650V$, $I_D=3.6A$
- Drain-Source ON Resistance :
 $R_{DS(ON)}(Max)=2.5\Omega$ @ $V_{GS}=10V$
- $Q_g(typ.)=15nC$

MAXIMUM RATING ($T_c=25^\circ C$)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain-Source Voltage		V _{DSS}	650	V
Gate-Source Voltage		V _{GSS}	±30	V
Drain Current	@T _C =25°C	I _D	3.6*	A
	@T _C =100°C		2.3*	
	Pulsed (Note1)	I _{DP}	8.4*	
Single Pulsed Avalanche Energy (Note 2)		E _{AS}	103	mJ
Repetitive Avalanche Energy (Note 1)		E _{AR}	3.1	mJ
Peak Diode Recovery dv/dt (Note 3)		dv/dt	4.5	V/ns
Drain Power Dissipation	T _C =25°C	P _D	37.9	W
	Derate above 25°C		0.30	W/°C
Maximum Junction Temperature		T _j	150	°C
Storage Temperature Range		T _{stg}	-55 150	°C
Thermal Characteristics				
Thermal Resistance, Junction-to-Case		R _{thJC}	3.3	°C/W
Thermal Resistance, Junction-to-Ambient		R _{thJA}	62.5	°C/W

* : Drain current limited by maximum junction temperature.

PIN CONNECTION



KF4N65FM

ELECTRICAL CHARACTERISTICS (Tc=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	I _D =250 μA, V _{GS} =0V	650	-	-	V
Breakdown Voltage Temperature Coefficient	Δ BV _{DSS} / Δ T _j	I _D =250 μA, Referenced to 25°C	-	0.65	-	V/°C
Drain Cut-off Current	I _{DSS}	V _{DS} =650V, V _{GS} =0V,	-	-	10	μA
Gate Threshold Voltage	V _{th}	V _{DS} =V _{GS} , I _D =250 μA	2.5	-	4.5	V
Gate Leakage Current	I _{GSS}	V _{GS} =±30V, V _{DS} =0V	-	-	±100	nA
Drain-Source ON Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =1.8A	-	2.1	2.5	Ω
Dynamic						
Total Gate Charge	Q _g	V _{DS} =520V, I _D =3.6A V _{GS} =10V (Note4,5)	-	15	-	nC
Gate-Source Charge	Q _{gs}		-	4.1	-	
Gate-Drain Charge	Q _{gd}		-	6.0	-	
Turn-on Delay time	t _{d(on)}	V _{DD} =325V I _D =3.6A R _G =25Ω (Note4,5)	-	25	-	ns
Turn-on Rise time	t _r		-	15	-	
Turn-off Delay time	t _{d(off)}		-	45	-	
Turn-off Fall time	t _f		-	15	-	
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1.0MHz	-	510	-	pF
Output Capacitance	C _{oss}		-	60	-	
Reverse Transfer Capacitance	C _{rss}		-	6.5	-	
Source-Drain Diode Ratings						
Continuous Source Current	I _S	V _{GS} <V _{th}	-	-	3.6	A
Pulsed Source Current	I _{SP}		-	-	14.4	
Diode Forward Voltage	V _{SD}	I _S =3.6A, V _{GS} =0V	-	-	1.4	V
Reverse Recovery Time	t _{rr}	I _S =3.6A, V _{GS} =0V,	-	350	-	ns
Reverse Recovery Charge	Q _{rr}	dI _S /dt=100A/μs	-	2.1	-	μC

Note 1) Repetivity rating : Pulse width limited by junction temperature.

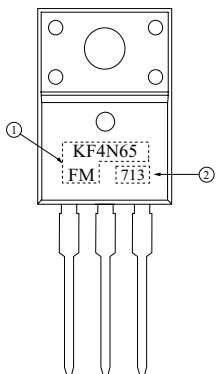
Note 2) $L=15mH, I_S=3.6A, V_{DD}=50V, R_G=25\Omega$, Starting $T_j=25^\circ C$.

Note 3) $I_S \leq 7.0A, dI/dt \leq 200A/\mu s, V_{DD} \leq BV_{DSS}$, Starting $T_j=25^\circ C$.

Note 4) Pulse Test : Pulse width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

Note 5) Essentially independent of operating temperature.

Marking



① PRODUCT NAME

② LOT NO

Fig1. $I_D - V_{DS}$

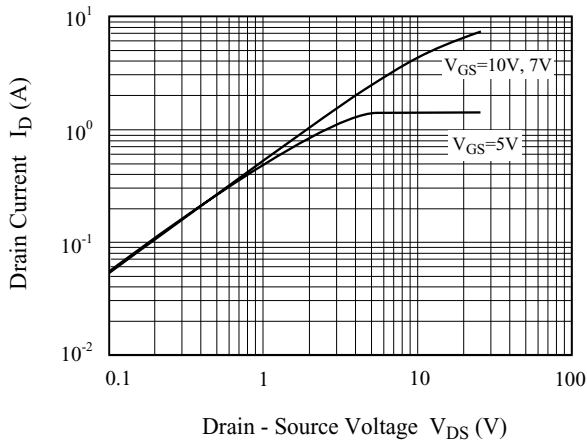


Fig2. $I_D - V_{GS}$

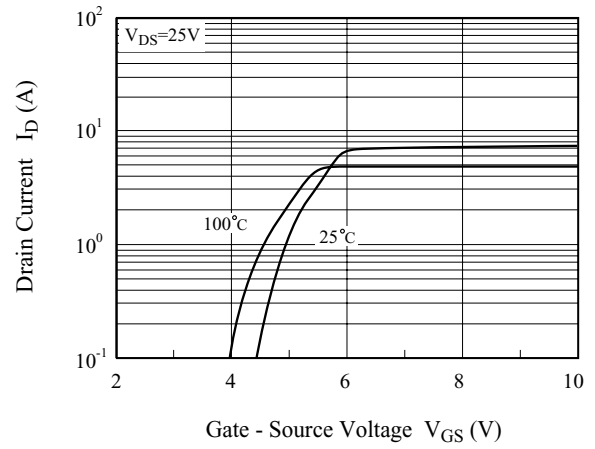


Fig3. $BV_{DSS} - T_j$

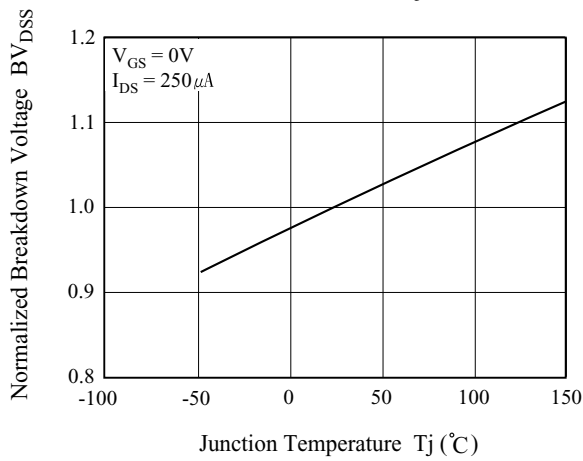


Fig4. $R_{DS(ON)} - I_D$

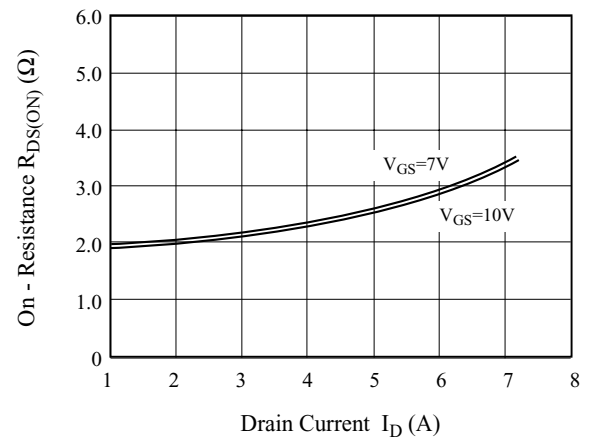


Fig5. $I_S - V_{SD}$

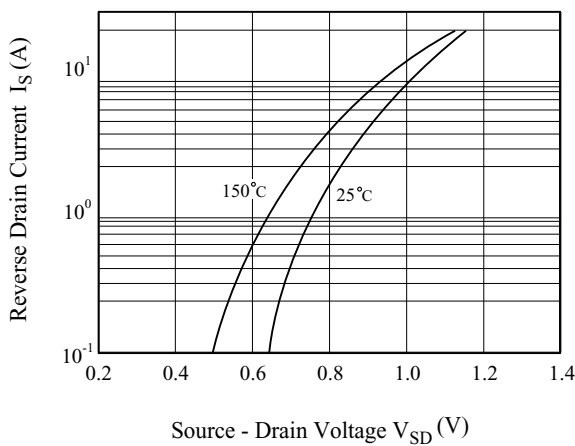


Fig6. $R_{DS(ON)} - T_j$

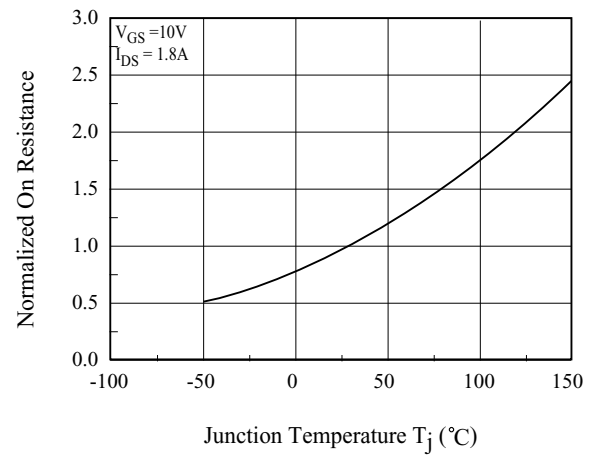


Fig 7. C - V_{DS}

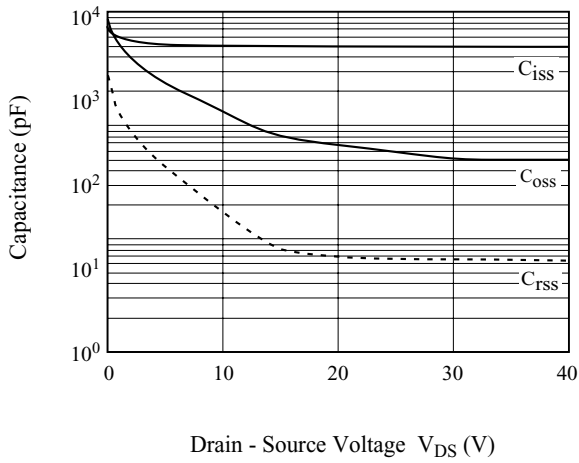


Fig 8. Q_g - V_{GS}

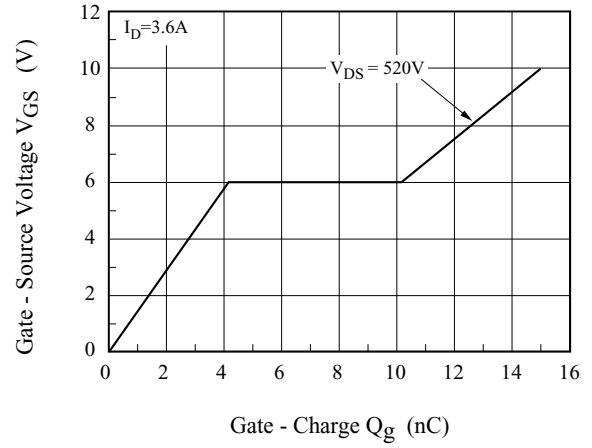


Fig 9. Safe Operation Area

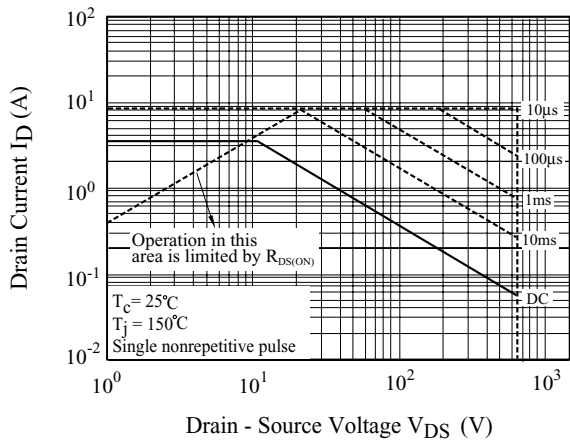


Fig10. Transient Thermal Response Curve

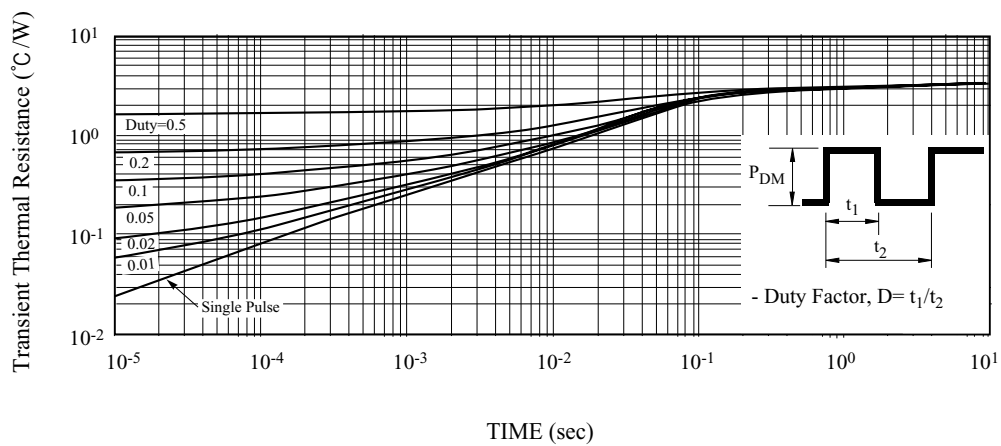


Fig11. Gate Charge

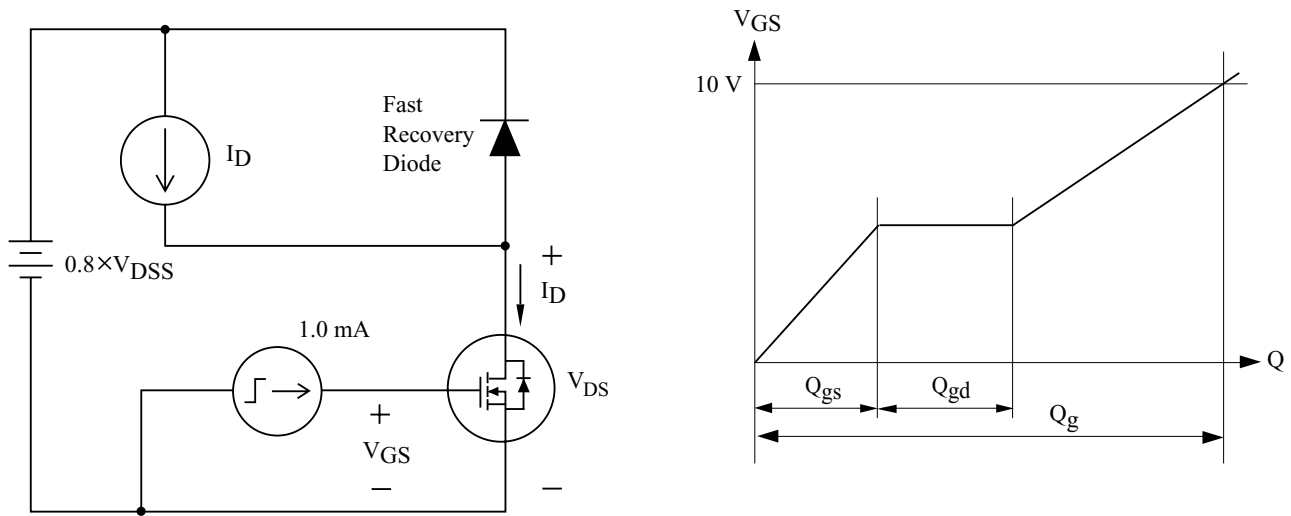


Fig12. Single Pulsed Avalanche Energy

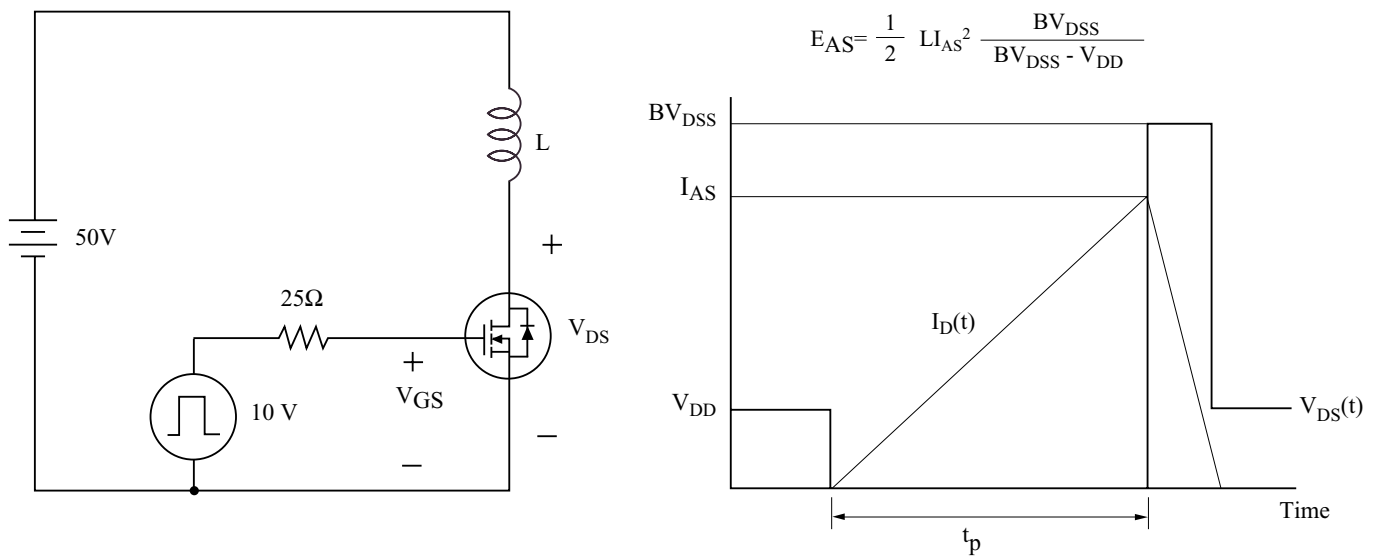


Fig13. Resistive Load Switching

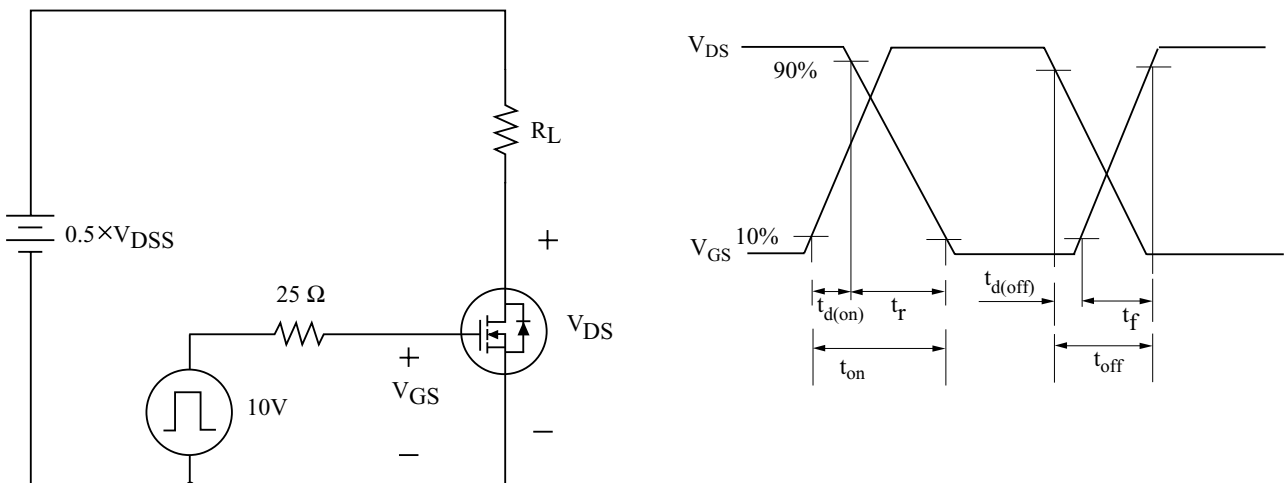


Fig14. Source - Drain Diode Reverse Recovery and dv/dt

