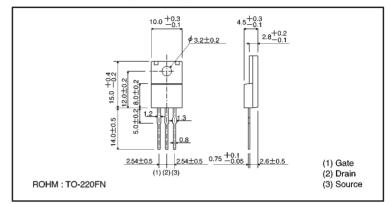
Switching (450V, 5A) 25K2713

Features

- 1) Low on-resistance.
- 2) Fast switching speed.
- 3) Wide SOA (safe operating area).
- 4) Gate-source voltage (V_{GSS}) guaranteed to be $\pm 30V$.
- 5) Easily designed drive circuits.
- 6) Easy to parallel.

StructureSilicon N-channelMOSFET

External dimensions (Units: mm)



●Absolute maximum ratings (Ta = 25°C)

Parameter		Symbol	Limits	Unit
Drain-source voltage		Voss	450	٧
Gate-source voltage		Vgss	±30	٧
Drain current	Continuous	ΙD	5	Α
	Pulsed	lpp*	20	А
Reverse drain current	Continuous	IDR	5	А
	Pulsed	IDRP*	20	А
Total power dissipation (Tc=25°C)		Po	30	W
Channel temperature		Tch	150	°C
Storage temperature		Tstg	-55~ +1 50	°C

^{*} Pw \leq 10 μ s, Duty cycle \leq 1%

Packaging specifications

	Package	Bulk
Туре	Code	_
	Basic ordering unit (pieces)	500
2SK2713		0

Transistors 2SK2713

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Test Conditions
Gate-source leakage	lgss	_	_	±100	nA	V _{GS} =±30V, V _{DS} =0V
Drain-source breakdown voltage	V(BR)DSS	450	_	_	٧	In=1mA, Vgs=0V
Zero gate voltage drain current	Ipss	_	_	100	μΑ	V _{DS} =450V, V _{GS} =0V
Gate threshold voltage	VGS(th)	2.0	_	4.0	٧	V _{DS} =10V, I _D =1mA
Static drain-source on-state resistance	RDS(on)		1.0	1.4	Ω	In=2.5A, Vgs=10V
Forward transfer admittance	Yfs	1.0	3.0	_	S	In=2.5A, Vns=10V
Input capacitance	Ciss	_	600	_	рF	V _{DS} =10V
Output capacitance	Coss	_	135	_	рF	V _{GS} =0V
Reverse transfer capacitance	Crss	_	53	_	рF	f=1MHz
Turn-on delay time	td(on)	_	14	_	ns	Io=2.5A, Voo≒150V
Rise time	tr	_	17	_	ns	V _{GS} =10V
Turn-off delay time	td(off)		50	_	ns	RL=60 Ω
Fall time	t f	_	35	_	ns	R _G =10Ω
Reverse recovery time	trr		300		ns	IDR=5A, VGS=0V
Reverse recovery charge	Qrr	_	1.8	_	μC	di/dt=100A/ μs

Electrical characteristic curves

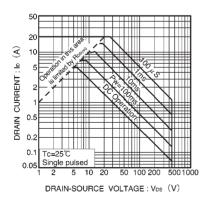


Fig.1 Maximum safe operating area

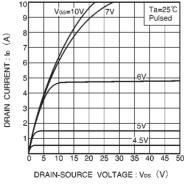


Fig.2 Typical output characteristics

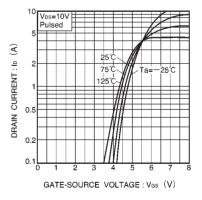
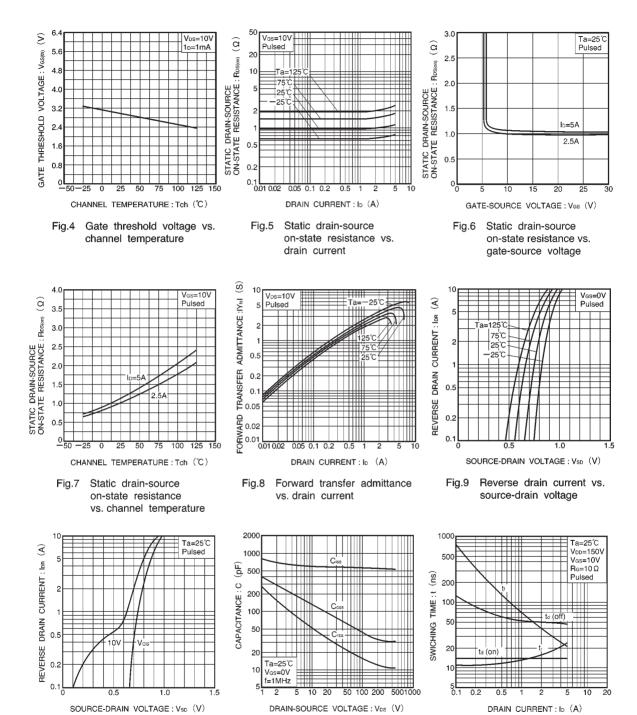


Fig.3 Typical transfer characteristics

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Typical capacitance vs. drain-souce voltage

Fig. 12 Switching characteristics (See Figures 16 and 17

waveforms)

for the measurement circuit and resultant

Fig.10 Reverse drain current vs.

source-drain voltage

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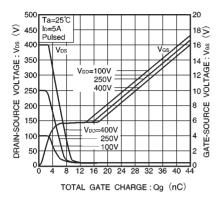


Fig.13 Dynamic input characteristics (See Figure. 18 for measurement circuit)

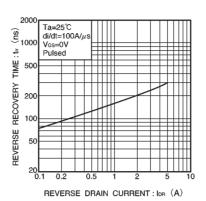


Fig.14 Reverse recovery time vs. reverse drain current

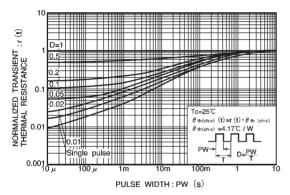
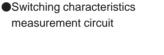


Fig.15 Normalized transient thermal resistance vs. pulse width



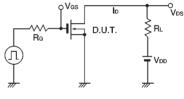


Fig.16 Switching time measurement circuit

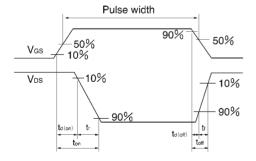


Fig.17 Switching time waveforms

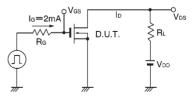


Fig.18 Gate charge measurement circuit

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