Switching (600V, 7A) 2SK2740

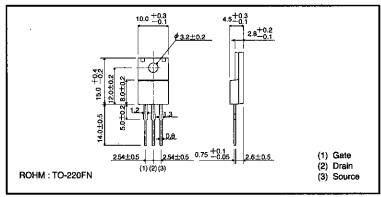
Features

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

Structure Silicon N-channel

MOSFET transistor

External dimensions (Units: mm)



●Absolute maximum ratings (Ta = 25°C)

Parameter		Symbol	Limits	Unit
Drain-source voltage		Voss	600	V
Gate-source voltage		Vgss	±30	V
Drain current	Continuous	lo	7	Α
	Pulsed	lpp * 28		Α
Drain reverse current	Continuous	IDR	7	Α
	Pulsed	IDRP *	28	Α
Total power dissipation(Tc=°C)		Po	30	w
Channel temperature		Tch	150	ಌ
Storage temperature		Tstg	−55~150	°

^{*} Pw≦10 μs, Duty cycle≦1%

Packaging specifications

	Package	Bulk
Туре	Code	
	Basic ordering unit (pieces)	500
2SK2740		0

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Тур.	Max.	Ųnit	Conditions
Gate leakage current	Igss	_		±100	nA	V _{GS} =±30V, V _{DS} =0V
Drain-source breakdown voltage	V(eR)DSS	600		_	٧	In=1mA, Vas=0V
Drain cutoff current	loss	_	_	100	μΑ	V _{DS} =600V, V _{GS} =0V
Gate threshold voltage	VGS(th)	2		4	٧	V _{DS} =10V, I _D =1mA
Drain-source on-state resistance	RDS(on)		1	1.2	Ω	Ip=4A, Vgs=10V
Forward transfer admittance	Yfs *	3	6	_	s	V _{DS} =10V, I _D =4A
Input capacitance	Ciss		1050	_	pF	V _{DS} ≔10V
Output capacitance	Coss	_	210	-	pF	V _{GS} =0V
Reverse transfer capacitance	Crss		80	_	рF	f=1MHz
Turn-on delay time	td(an)	_	19		ns	In=4A, Vnn≒150V
Rise time	tr	_	22	_	ns	V _{GS} =10V
Turn-off delay time	td(aff)		79	_	ns	RL=37.5Ω
Fall time	tr		30	_	ns	R _G =10 Ω
Reverse recovery time	t rr	_	590	_	ns	IDR=7A, VGS=0V
Reverse recovery load	Qır	_	4.6	_	μC	di/dt=100A/ μs

^{*} Pw \leq 300 μ s, Duty cycle \leq 1%

Electrical characteristic curves

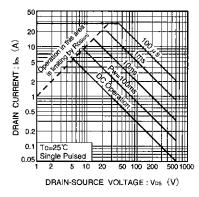


Fig.1 Maximum Safe Operating Area

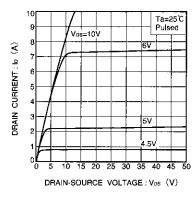


Fig.2 Typical Output Characteristics

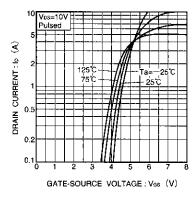
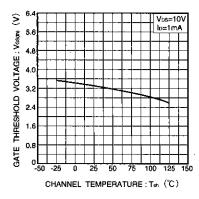


Fig.3 Typical Transfer Characteristics

Transistors 2SK2740

Electrical characteristic curves



V_{GS}=10V Pulsed ĝ RDS(m) STATIC DRAIN-SOURCE ON-STATE RESISTANCE 0.05 0.1 0.5 DRAIN CURRENT: 10 (A)

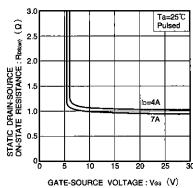
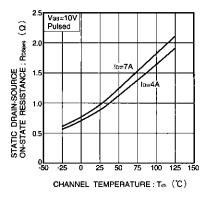


Fig.4 Gate Threshold Voltage vs. Channel Temperature

Static Drain-Source On-State Fig.5 Resistance vs. Drain Current

Fig.6 Static Drain-Source On-State Resistance vs. Gate-Source Voltage



WARD TRANSFER ADMITTANCE: IYS 0. DRAIN CURRENT: Ib (A)

Vas=10V Pulsed

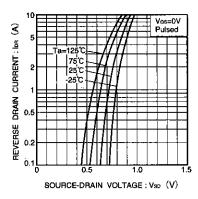
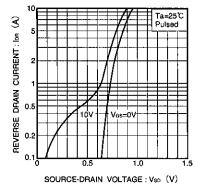
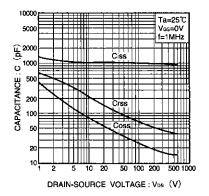


Fig.7 Static Drain-Source On-State Resistance vs. Channel Temperature

Fig.8 Forward Transfer Admittance vs. Drain Current

Reverse Drain Current vs. Source-Drain Voltage (I)





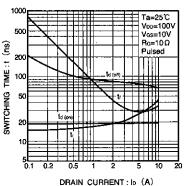


Fig.10 Reverse Drain Current vs. Source-Drain Voltage (I)

Fig.11 Typical Capacitance vs. Drain-Source Voltage

Fig.12 Switching Characteristics (See Figure. 16 and 17 for measurement circuits)

MOS FET

Electrical characteristic curves

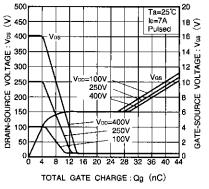


Fig.13 Dynamic Input Characteristics (See Fig. 18 for measurement circuit)

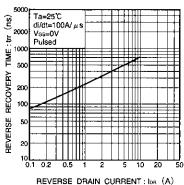


Fig.14 Reverse Recovery Time vs. Reverse Drain Current

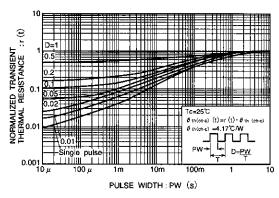
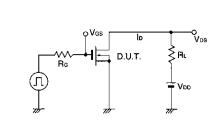


Fig.15 Normalized Transient Thermal Resistance vs. Pulse Width



 Switching characteristics measurement circuit

Fig.16 Switching Time Measurement Circuit

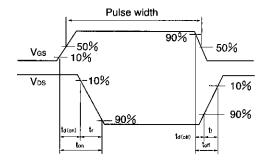


Fig.17 Switching Time Waveforms

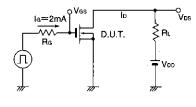


Fig.18 Gate Charge Measurement Circuit

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