

Small switching (60V, 2A)

2SK2463

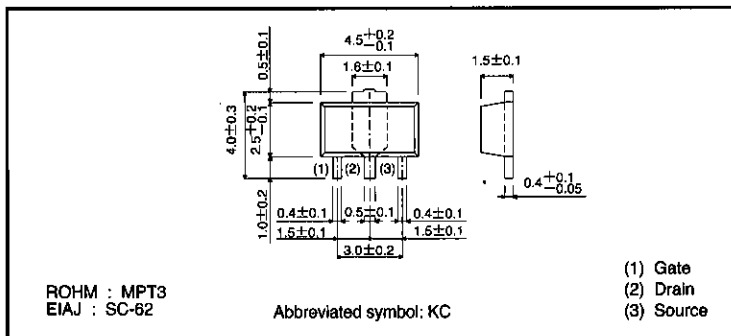
●Features

- 1) Low on-resistance.
- 2) High-speed switching.
- 3) Wide SOA (safe operating area).
- 4) Low-voltage drive (4V).
- 5) Easily designed drive circuits.
- 6) Easy to use in parallel.

●Structure

Silicon N-channel
MOSFET transistor

●External dimensions (Units: mm)



MOS FET

●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit	
Drain-source voltage	V _{DSS}	60	V	
Gate-source voltage	V _{GSS}	±20	V	
Drain current	Continuous	I _D	2	A
	Pulsed	I _{DP} *1	8	A
Drain reverse current	Continuous	I _{DR}	2	A
	Pulsed	I _{DRP} *1	8	A
Total power dissipation	P _D *2	2	W	
Channel temperature	T _{ch}	150	°C	
Storage temperature	T _{stg}	-55~150	°C	

*1 P_w ≤ 10 μs, Duty cycle ≤ 1% *2 When mounted on a 40 x 40 x 0.7 mm aluminum-ceramic board.

●Packaging specifications

Type	Package	Bulk
	Code	T100
	Basic ordering unit (pieces)	3000
2SK2463		○

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Gate leakage current	I _{gss}	—	—	±100	nA	V _{GS} =±20V, V _{DS} =0V
Drain-source breakdown voltage	V _{(BR)DSS}	60	—	—	V	I _D =1mA, V _{GS} =0V
Drain cutoff current	I _{DSS}	—	—	10	μA	V _{DS} =60V, V _{GS} =0V
Gate threshold voltage	V _{GS(th)}	1	—	2.5	V	V _{DS} =10V, I _D =1mA
Drain-source on-state resistance	R _{DS(on)}	—	0.30	0.38	Ω	I _D =1A, V _{GS} =10V
		—	0.45	0.58		I _D =1A, V _{GS} =4V
Forward propagation admittance	Y _{fs} *	1.2	—	—	S	V _{DS} =10V, I _D =1A
Input capacitance	C _{iss}	—	200	—	pF	V _{DS} =10V
Output capacitance	C _{oss}	—	80	—	pF	V _{GS} =0V
Reverse transfer capacitance	C _{rss}	—	50	—	pF	f=1MHz
Turn-on delay time	t _{d(on)}	—	10	—	ns	I _D =1A, V _{DD} ≐30V
Rise time	t _r	—	25	—	ns	V _{GS} =10V
Turn-off delay time	t _{d(off)}	—	50	—	ns	R _L =30Ω
Fall time	t _f	—	50	—	ns	R _G =10Ω
Reverse recovery time	t _{rr}	—	70	—	ns	I _{DR} =2A, V _{GS} =0V, di/dt=50A/μs

* P_w≤300 μs, Duty cycle≤1%

●Electrical characteristic curves

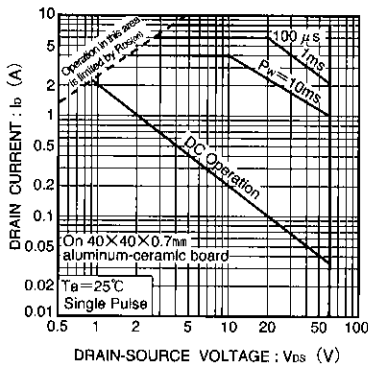


Fig.1 Maximum Safe Operating Area

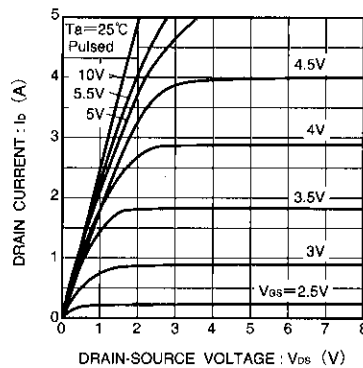


Fig.2 Typical Output Characteristics

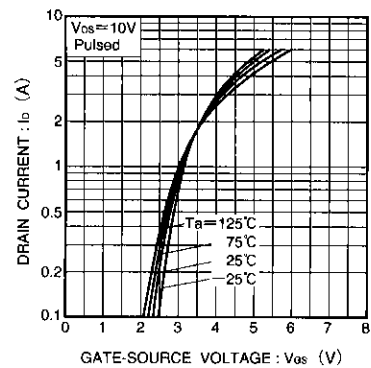


Fig.3 Typical Transfer Characteristics

●Electrical characteristic curves

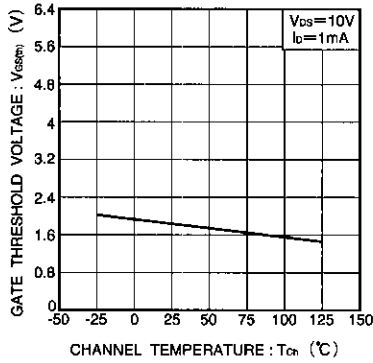


Fig.4 Gate Threshold Voltage vs. Channel Temperature

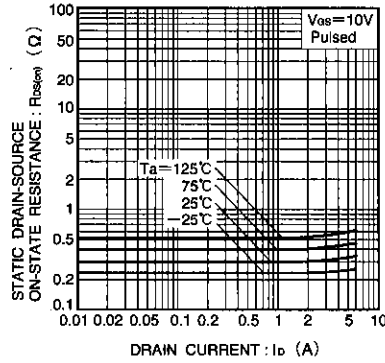


Fig.5 Static Drain-Source On-State Resistance vs. Drain Current (I)

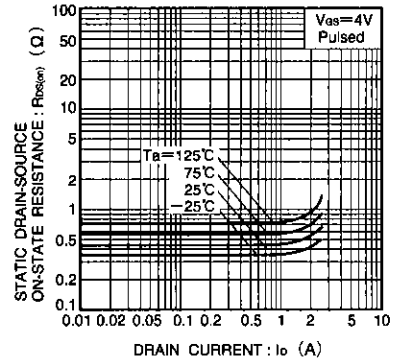


Fig.6 Static Drain-Source On-State Resistance vs. Drain Current (II)

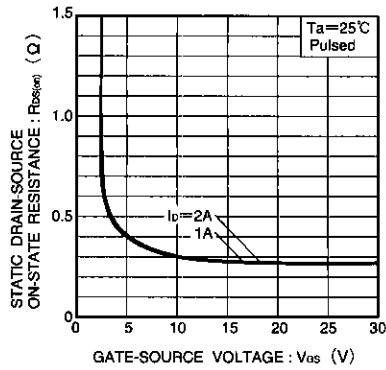


Fig.7 Static Drain-Source On-State Resistance vs. Gate-Source Voltage

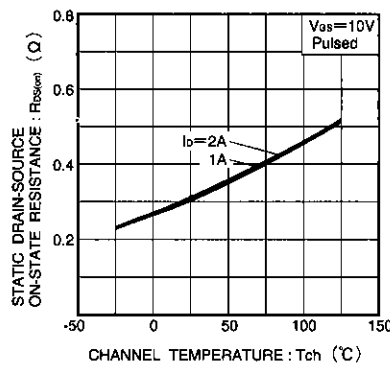


Fig.8 Static Drain-Source On-State Resistance vs. Channel Temperature

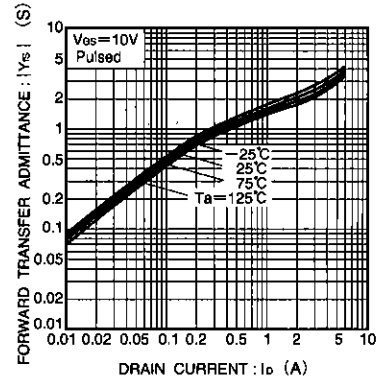


Fig.9 Forward Transfer Admittance vs. Drain Current

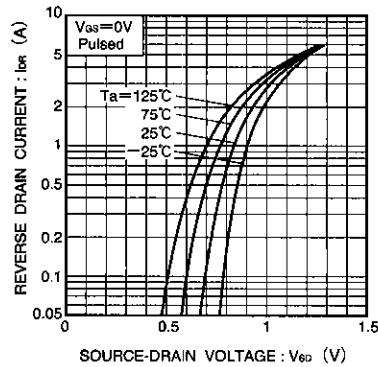


Fig.10 Reverse Drain Current vs. Source-Drain Voltage (I)

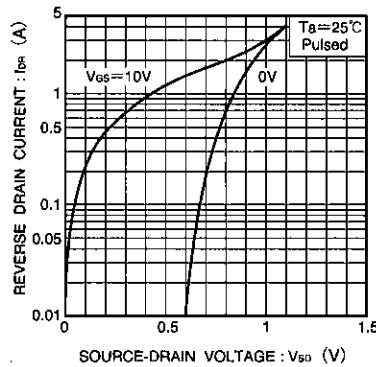


Fig.11 Reverse Drain Current vs. Source-Drain Voltage (II)

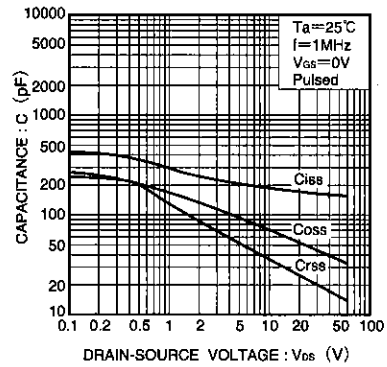


Fig.12 Typical Capacitance vs. Drain-Source Voltage

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●Electrical characteristic curves

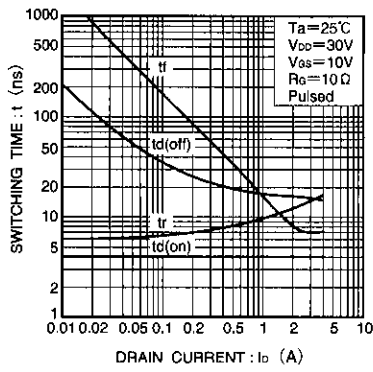


Fig.13 Switching Characteristics
(See Figure. 16 and 17 for measurement circuits)

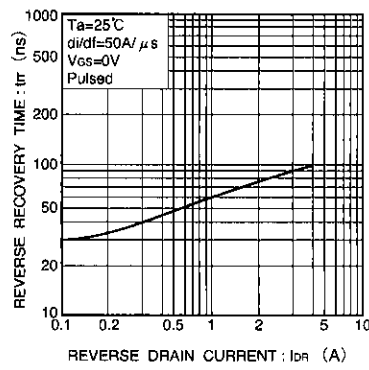


Fig.14 Reverse Recovery Time vs. Reverse Drain Current

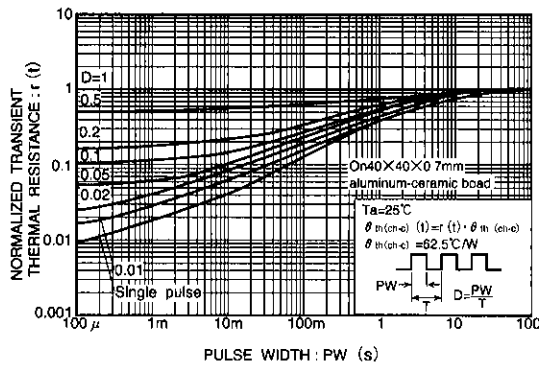


Fig.15 Normalized Transient Thermal Resistance vs. Pulse Width

●Switching characteristics measurement circuit

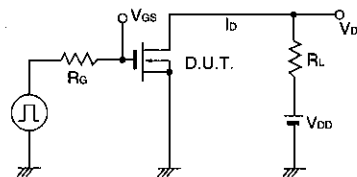


Fig.16 Switching Time Measurement Circuit

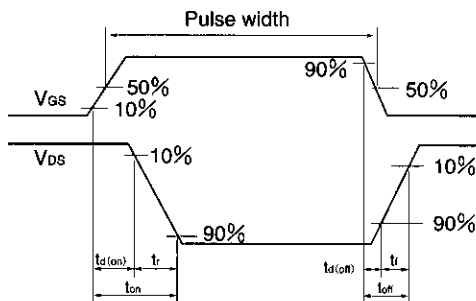


Fig.17 Switching Time Waveforms

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