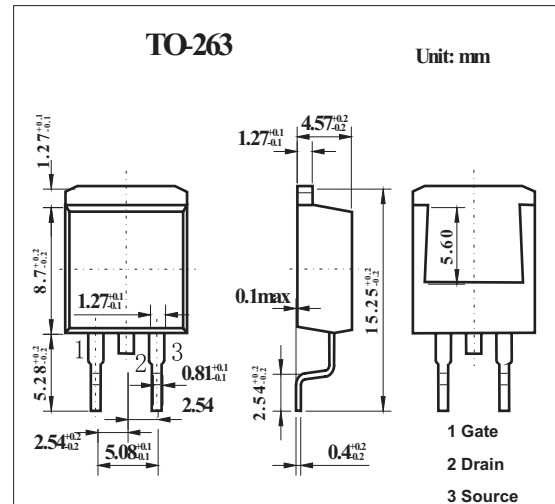


N-channel Enhancement Mode MOSFET

2SK3652

■ Features

- Low on-resistance, low Qg
- High avalanche resistance
- For high-speed switching



■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Drain-source surrender voltage	V _{DS}	230	V
Gate-source surrender voltage	V _{GS}	±30	V
Drain current	I _D	50	A
Peak drain current	I _{DP}	200	A
Avalanche energy capability *	E _{AS}	2 200	mJ
Power dissipation Ta = 25°C	P _D	3	W
Power dissipation		100	
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

* L = 1 mH, I_L = 50 A, V_{DD} = 100 V, 1 pulse, T_a = 25°C

2SK3652

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Gate-drain surrender voltage	V _{DSS}	I _D = 1 mA, V _{GS} = 0	230			V
Gate threshold voltage	V _{th}	V _{DS} = 25 V, I _D = 10 mA	2		4	V
Drain-source cutoff current	I _{DSS}	V _{DS} = 184 V, V _{GS} = 0			100	μA
Gate-source cutoff currentt	I _{GSS}	V _{GS} = ±30 V, V _{DS} = 0			±1	μA
Drain-source on resistance	R _{DS(on)}	V _{GS} = 10 V, I _D = 25 A		29	40	mΩ
Forward transfer admittance	Y _{fs}	V _{DS} = 25 V, I _D = 25 A	17	35		S
Short-circuit forward transfer capacitance	C _{iss}	V _{DS} = 25 V, V _{GS} = 0, f = 1 MHz		5 950		pF
Short-circuit output capacitance	C _{oss}			850		pF
Reverse transfer capacitance	C _{rss}			80		pF
Turn-on delay time	t _{d(on)}	V _{DD} = 100 V, I _D = 25 A, R _L = 4 Ω, V _{GS} = 10 V		65		ns
Rise time	t _r			140		ns
Turn-off delay time	t _{d(off)}			470		ns
Fall time	t _f			145		ns
Diode foward voltage	V _{DSF}	I _{DR} = 50 A, V _{GS} = 0			-1.5	V
Reverse recovery time	t _{rr}	L = 230 μH, V _{DD} = 100 V		235		ns
Reverse recovery charge	Q _{rr}	I _{DR} = 25 A, di/dt = 100 A/μs		1 180		nC
Total gate charge	Q _g	V _{DD} = 100 V, I _D = 25 A, V _{GS} = 10 V		105		nC
Gate-source charge	Q _{gs}			40		nC
Gate-drain charge	Q _{gd}			14		nC
Channel-case heat resistance	R _{th(ch-c)}				1.25	°C/W
Channel-atmosphere heat resistance	R _{th(ch-a)}				41.6	°C/W