N-channel Enhancement Mode MOSFET
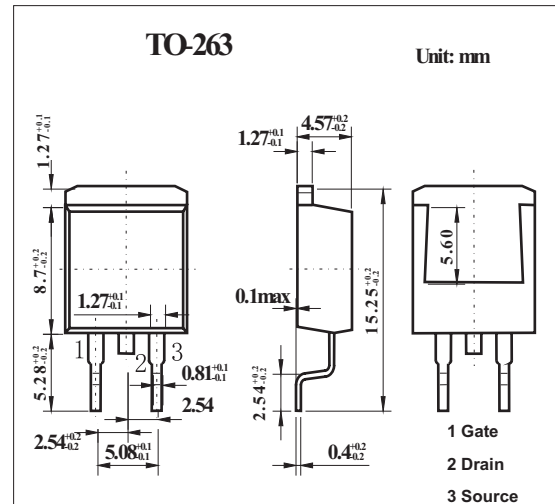
2SK3652

■ Features

● Low on-resistance, low Qg

● High avalanche resistance

● For high-speed switching

TO-263 package drawing

1 Gate
2 Drain
3 Source

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Drain-source surrender voltage	V_{DSS}	230	V
Gate-source surrender voltage	V_{GSS}	±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℃	P_D	3	W
Power dissipation		100	
Channel temperature	T_{ch}	150	℃
Storage temperature	T_{stg}	-55 to +150	℃

* L = 1 mH, I_L = 50 A, V_{DD} = 100 V, 1 pulse, Ta = 25℃

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■ Electrical Characteristics Ta = 25℃

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}			5 950		pF
Short-circuit output capacitance	C_{oss}	V_{DS} = 25 V, V_{GS} = 0, f = 1 MHz		850		pF
Reverse transfer capacitance	C_{rss}			80		pF
Turn-on delay time	$t_{d(on)}$			65		ns
Rise time	t_r	V_{DD} = 100 V, I_D = 25 A, R_L = 4 Ω,		140		ns
Turn-off delay time	$t_{d(off)}$	V_{GS} = 10 V		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			105		nC
Gate-source charge	Q_{gs}	V_{DD} = 100 V, I_D = 25 A, V_{GS} = 10 V		40		nC
Gate-drain charge	Q_{gd}			14		nC
Channel-case heat resistance	$R_{th(ch-c)}$				1.25	℃/W
Channel-atmosphere heat resistance	$R_{th(ch-a)}$				41.6	℃/W

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