

## 2SK3531-01 (900V/2.5Ω/6A)

1) Package TO-220

2) Absolute Maximum Ratings (Tc=25 unless otherwise specified)

Items	Symbols	Ratings	Units
Drain-Source Voltage	$V_{DS}$	900	V
Continuous Drain Current	$I_D$	±6	A
Pulsed Drain Current	$I_{D(pulse)}$	±24	A
Gate-Source Voltage	$V_{GS}$	±30	V
Repetitive and Non-Repetitive Maximum Avalanche Current	$I_{AR}$	6	A
Non-Repetitive Maximum Avalanche Energy	$E_{AS}$	244.0	mJ *1
Maximum Drain-Source dV/dt	dVDS/dt	20	kV/us
Peak Diode recovery dV/dt	dV/dt	5	kV/us *2
Maximum Power Dissipation	$P_D @ T_c=25$	195	W
	$P_D @ T_a=25$	2.02	W
Operating and Storage Temperature range	$T_{ch}$	150	
	$T_{stg}$	-55 ~ +150	

3) Electrical Characteristics (Tch=25 unless otherwise specified)

Items	Symbols	Test Conditions	min.	typ.	max.	Units
Drain-Source Breakdown Voltage	$BV_{DSS}$	$I_D=250\mu A$ $V_{GS}=0V$	900	---	---	V
Gate Threshold Voltage	$V_{GS(th)}$	$I_D=250\mu A$ $V_{DS}=V_{GS}$	3.0	---	5.0	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=900V$ $T_{ch}=25$	---	---	50	$\mu A$
		$V_{GS}=0V$ $T_{ch}=125$	---	---	500	$\mu A$
Gate-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 30V$ $V_{DS}=0V$	---	---	100	nA
Drain-Source On-State Resistance	$R_{DS(on)}$	$I_D=3A$ $V_{GS}=10V$	---	---	2.5	
Input Capacitance	$C_{iss}$	$V_{DS}=25V$	---	830	---	pF
Output Capacitance	$C_{oss}$	$V_{GS}=0V$	---	100	---	
Reverse Transfer Capacitance	$C_{rss}$	f=1MHz	---	5	---	
Total Gate Charge	Qg	$V_{CC}=450V$	---	25	---	nC
Gate to Source Charge	Qgs	$I_D=6A$	---	7.5	---	
Gate to Drain (Miller) Charge	Qgd	$V_{GS}=10V$	---	7	---	
Avalanche Capability	$I_{AV}$	L=12.4mH Tch=25	6	---	---	A
Diode Forward On-Voltage	$V_{SD}$	$I_F=6A, V_{GS}=0V, Tch=25$	---	1.0	1.5	V

4) Thermal Characteristics

Items	Symbols	Test Conditions	min.	typ.	max.	Units
Channel to Case	$R_{th(ch-c)}$				0.64	/W
Channel to Ambient	$R_{th(ch-a)}$				62.0	/W

\*1 L=12.4mH, Vcc=90V

\*2  $I_F \leq -I_D, -di/dt=50A/\mu s, V_{CC} \leq BV_{DSS}, Tch \leq 150^\circ C$ 

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