

## 2SK3529-01 (800V/1.9Ω/7A)

1) Package TO-220

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

Items	Symbols	Ratings	Units
Drain-Source Voltage	$V_{DS}$	800	V
Continuous Drain Current	$I_D$	±7	A
Pulsed Drain Current	$I_{D(pulse)}$	±28	A
Gate-Source Voltage	$V_{GS}$	±30	V
Repetitive and Non-Repetitive Maximum Avalanche Current	$I_{AR}$	7	A
Non-Repetitive Maximum Avalanche Energy	$E_{AS}$	235.3	mJ *1
Maximum Drain-Source dV/dt	dV <sub>DS</sub> /dt	20	kV/us
Peak Diode recovery dV/dt	dV/dt	5	kV/us *2
Maximum Power Dissipation	$P_D$ @ Tc=25	195	W
	$P_D$ @ Ta=25	2.02	W
Operating and Storage Temperature range	$T_{ch}$ $T_{stg}$	150 -55 ~ +150	

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

Items	Symbols	Test Conditions	min.	typ.	max.	Units
Drain-Source Breakdown Voltage	$BV_{DSS}$	$I_D=250\mu A$ $V_{GS}=0V$	800	---	---	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	$I_{DSS}$	$V_{DS}=800V$ $T_{ch}=25$	---	---	50	μA
		$V_{GS}=0V$ $T_{ch}=125$	---	---	500	μA
Gate-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 30V$ $V_{DS}=0V$	---	---	100	nA
Drain-Source On-State Resistance	$R_{DS(on)}$	$I_D=3.5A$ $V_{GS}=10V$	---	---	1.9	
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	$Q_g$	$V_{CC}=400V$	---	25	---	nC
Gate to Source Charge	$Q_{gs}$	$I_D=7A$	---	7.5	---	
Gate to Drain (Miller) Charge	$Q_{gd}$	$V_{GS}=10V$	---	7	---	
Avalanche Capability	$I_{AV}$	$L=8.80mH$ $T_{ch}=25$	7	---	---	A
Diode Forward On-Voltage	$V_{SD}$	$I_F=7A, V_{GS}=0V, T_{ch}=25$	---	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=8.80mH, Vcc=80V

\*2  $I_F \leq -I_D$ , -di/dt=50A/μs, Vcc≤BV<sub>DSS</sub>, Tch≤150°C

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