



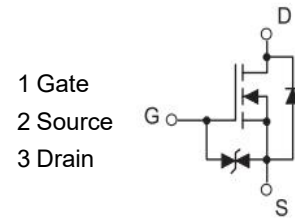
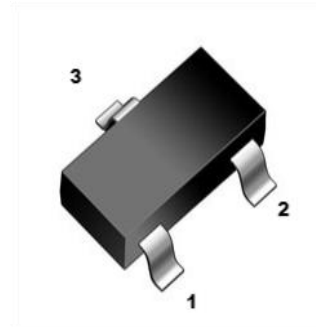
1. Features

- High density cell design for ultra low on-resistance
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability
- ESD protected

2. Mechanical Data

- Case:Molded Plastic,SOT-523 .
- Epoxy:UL 94V-0 rate flame retardant
- Terminals:Plated Leads Solderable perMIL-STD-750,Method-2026.
- Marking: 72K
- Mounting Position : Any.

SOT-523



3. Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	UNIT
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	300	mA
Power Dissipation	P_D	350	mW
Junction and Storage Temperature Range	T_J, T_{STG}	-55~ +150	°C

4. Electrical Characteristics ($T_a = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Off Characteristics						
Drain-source breakdown voltage	$V_{(BR) DSS}$	$V_{GS} = 0V, I_D = 10\mu A$	60			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 60V, V_{GS} = 0V$			1	μA
Gate-source leakage current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 10	μA
On characteristics						
Drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 500mA$			3	Ω
		$V_{GS} = 4.5V, I_D = 200mA$			4	Ω
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = 10V, I_D = 250\mu A$	1.0		2.5	V
Dynamic Characteristics						
Input capacitance	C_{iss}	$V_{DS} = 25V, V_{GS} = 0V, f = 1MHz$			50	pF
Output capacitance	C_{oss}				25	pF
Reverse transfer capacitance	C_{rss}				5	pF
Forward Transconductance	g_{fs}	$V_{DS} = 10V, I_D = 200mA$	80			mS



5. Rating And Characteristic Curves

Fig1: Output Characteristics

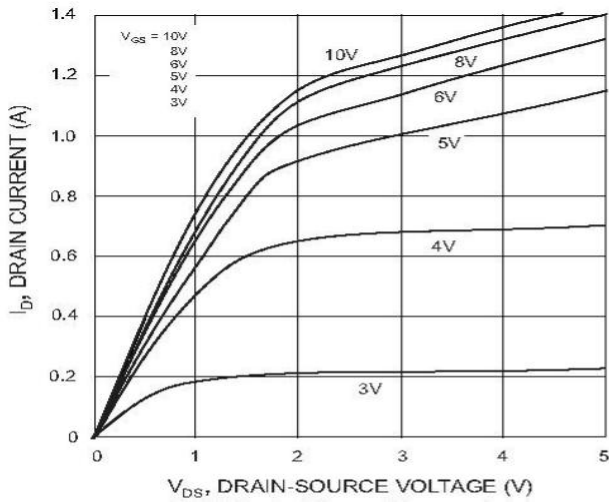


Fig2: Transfer Characteristics

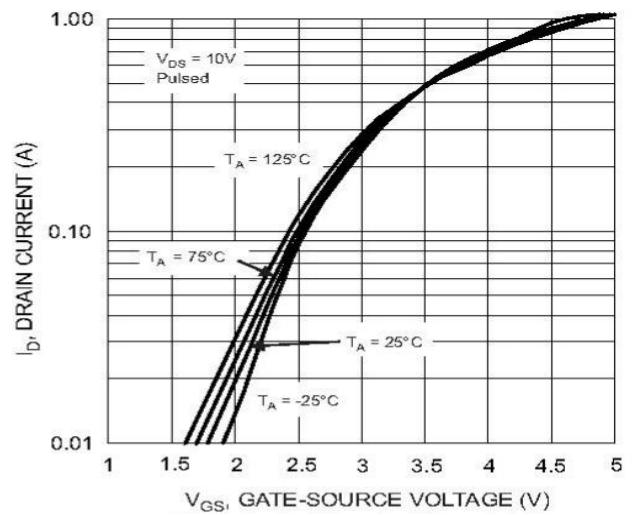


Fig.3 $R_{DS(on)}$ - I_D

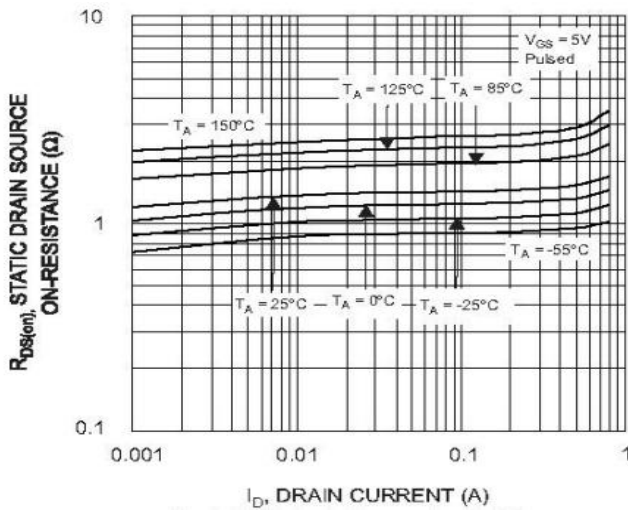
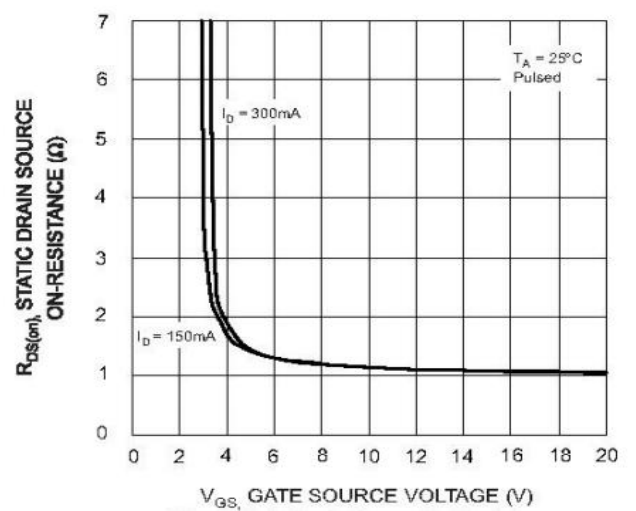
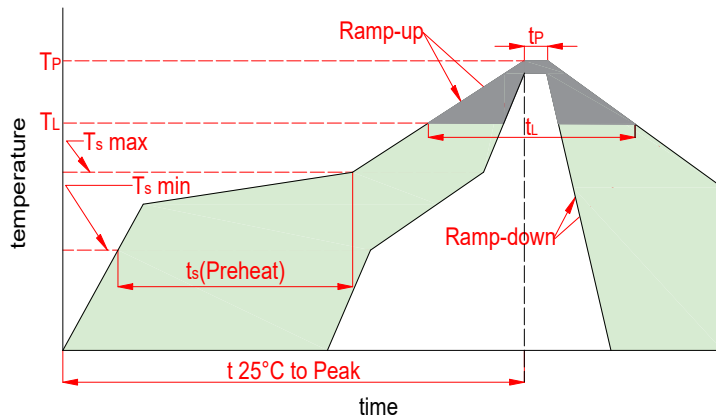


Fig.4 $R_{DS(on)}$ - V_{GS}



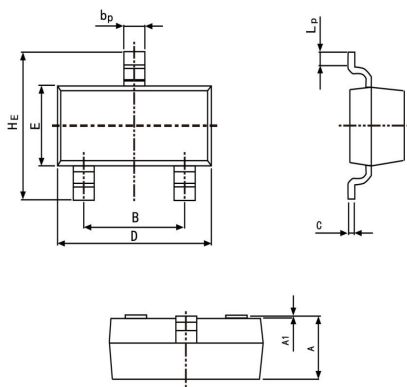


6. Soldering Parameters



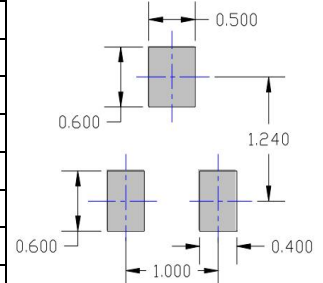
Reflow Condition		Lead-free
Pre Heat	Temp. min(T_s (min))	150°C
	Temp. max(T_s (min))	200°C
	Time(min to max)(t_s)	60~120s
Aver. ramp up rate(Liquidus Temp.)(T_L)to peak		3°C/s max
T_s (max) to T_L -Ramp-up Rate		3°C/s max
Reflow	Temp. (T_L)(Liquidus)	217°C
	Temp. (t_L)(Liquidus)	60~150s
Peak Temp. (T_P)		260 ^{+0/-5} °C
Time within actual peak Temp. (t_p)		30s max
Ramp-down Rate		6°C/s max
Time 25°C to peak Tempe. (T_P)		8 minutes max
Do not exceed		260°C

7. Dimensions



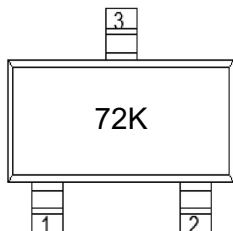
Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.028	0.035	0.70	0.90
B	0.035	0.043	0.90	1.10
bp	0.006	0.014	0.15	0.35
C	0.004	0.008	0.10	0.20
D	0.059	0.067	1.50	1.70
E	0.028	0.035	0.70	0.90
HE	0.057	0.069	1.45	1.75
A1	0.000	0.004	0.00	0.10
LP	0.010	0.018	0.26	0.46

Mounting PAD Layout



Unit: mm

8. Part Marking System



9. Package Information

Package	Part Number	Tape Width(mm)	Quantity(pcs)
SOT-523	2N7002KT	8	3000



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