



N-Channel Small Signal MOSFET

60V NPN
SOT23

Features

- Voltage Controlled Small Signal Switch
- ESD Protected
- High Density Cell Design for Ultra Low On-Resistance
- Load Switch for Portable Devices

Mechanical Data

- Case: SOT23 Package
- Case Material: "Green" Molding Compound
UL Flammability Classification Rating 94V-0
- Halogen Free

Note: Products with logo  or  are made by HY Electronic (Cayman) Limited.

Ordering Information

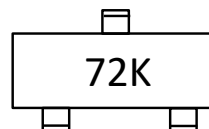
- Package :SOT23
- Reel Size :7 (inches)
- Quantity Per Reel :3,000 pcs
- Quantity One Box :45,000 pcs
- Quantity One Carton :180,000 pcs

Package Outline



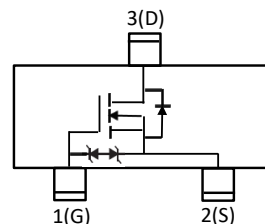
SOT23 Top View

Marking Information



"72K" = Product Type Marking Code

Device Schematic & PIN Configuration



Pin Assignment

1	G	Gate
2	S	Source
3	D	Drain

Maximum Ratings (@TA = +25°C, 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	340	mA
Collector Power Dissipation	P_D	350	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature Range	T_{STG}	-50 to +150	$^{\circ}C$

Electrical Characteristics(@TA = +25°C, unless otherwise specified.)

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	V_{DS}	60		-	V
Gate-Threshold Voltage (Note1.)	$V_{DS}=V_{GS}, I_D=1mA$	$V_{th(GS)}$	1	1.3	2.5	V
Gate-Body Leakage	$V_{DS}=0V, V_{GS}=\pm 20V$	I_{GSS1}	-	-	± 10	μA
	$V_{DS}=0V, V_{GS}=\pm 10V$	I_{GSS}	-	-	± 200	nA
	$V_{DS}=0V, V_{GS}=\pm 5V$	I_{GSS}	-	-	± 100	nA
Zero Gate Voltage Drain Current	$V_{DS}=48V, V_{GS}=0V$	I_{DSS}	-	-	1	μA
Drain-Source On-Resistance (Note1.)	$V_{GS}=10V, I_D=500mA$	$R_{DS(ON)}$	-	0.9	5	Ω
	$V_{GS}=4.5V, I_C=200mA$		-	1.1	5.3	
Diode Forward Voltage	$I_S=300mA, V_{GS}=0V$	V_{SD}	-	-	1.5	V

Switching Parameter

Input Capacitance (Note2.)	$V_{DS}=10V, V_{GS}=0V, F=1MHz$	C_{iss}	-	-	40	pF
Output Capacitance (Note2.)		C_{oss}	-	-	30	pF
Reverse Transfer Capacitance (Note2.)		C_{rss}	-	-	10	pF

Dynamic Parameter

Turn-on Time (Note2.)	$V_{DD}=50V, R_L=250\Omega, V_{GS}=10V, R_G=50\Omega$	$t_{d(ON)}$	-	-	10	ns
Turn-off Time (Note2.)		$t_{d(OFF)}$	-	-	15	
Reverse Recovery Time	$V_{GS}=0V, I_S=300mA, V_R=25V, di/dt=-100A/\mu s$	t_{rr}	-	30	-	ns

Notes:1.Pulse Test:Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

2.These parameters have on way to verify.

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Rating and Characteristic Curves

FIG.1 - Output Characteristics

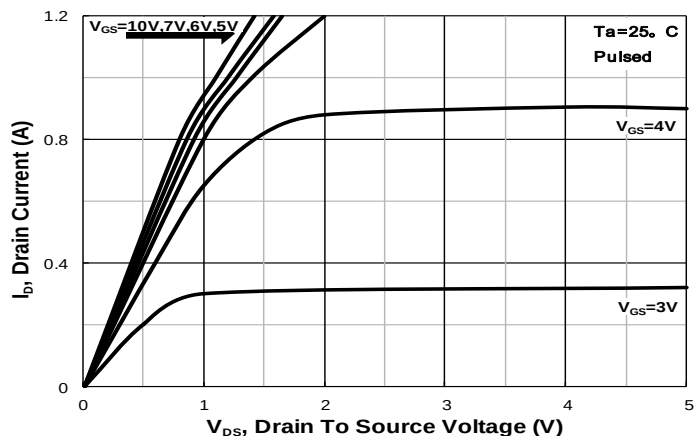


FIG.2 - Transfer Characteristics

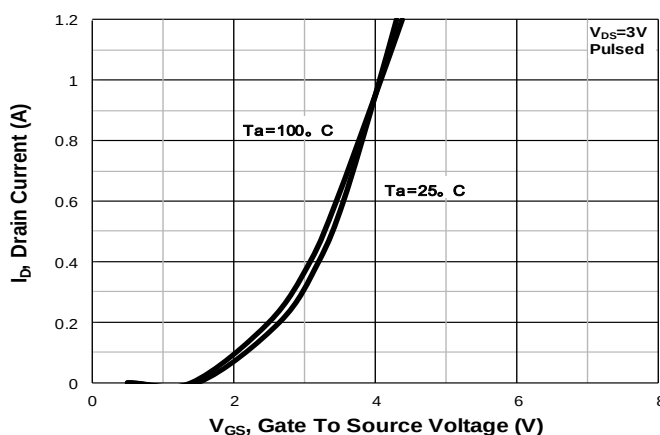


FIG.3 - $R_{DS(ON)} - I_D$

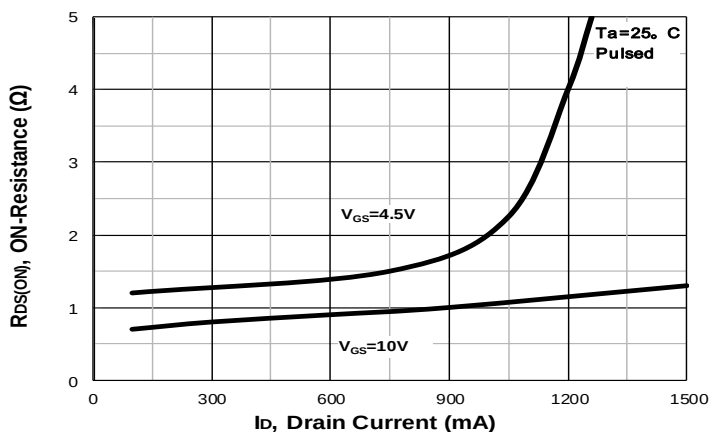


FIG.4 - $R_{DS(ON)} - V_{GS}$

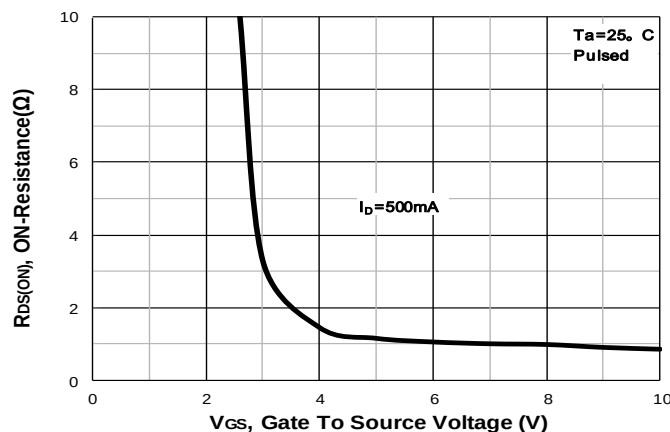


FIG.5 - $I_S - V_{SD}$

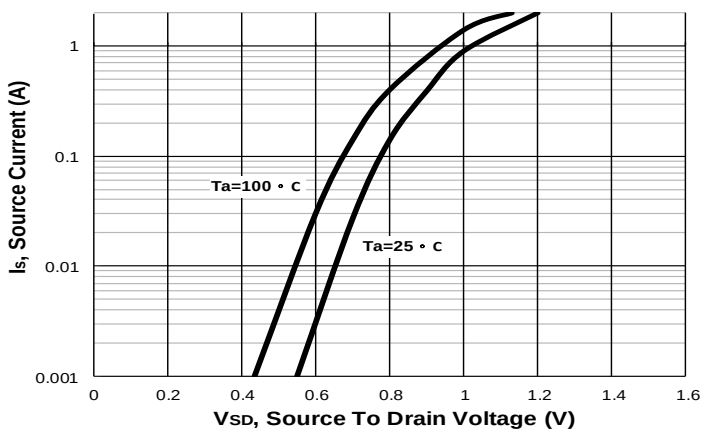
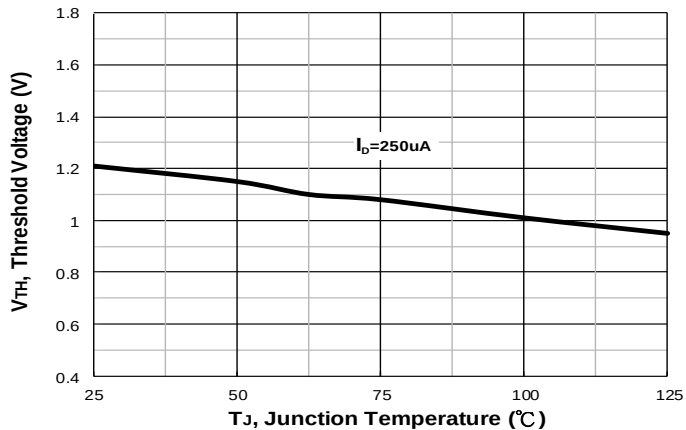
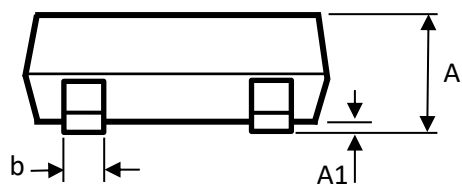
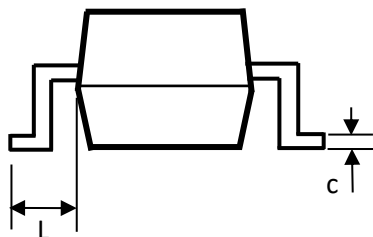
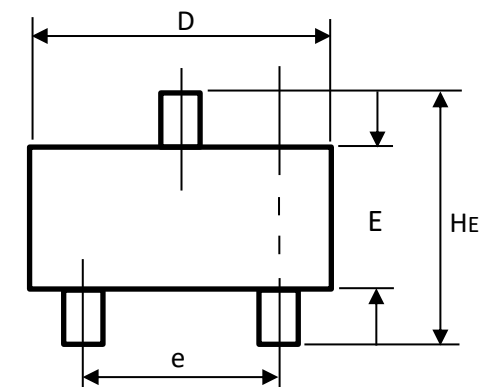


FIG.6 - Threshold Voltage



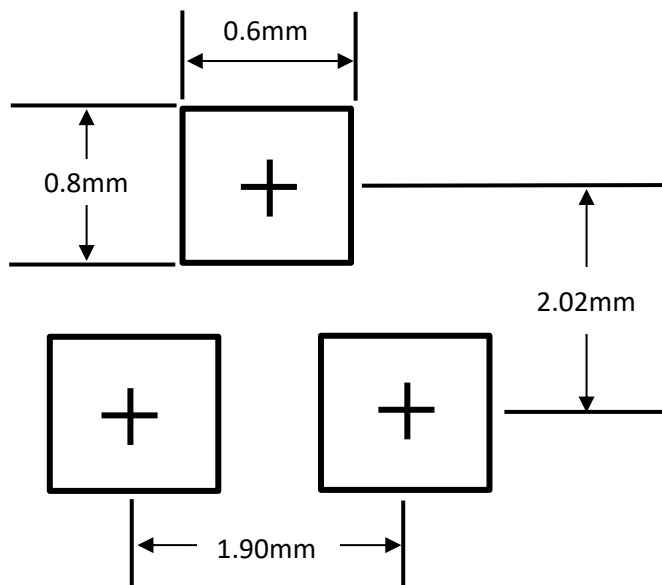


Package Outline Dimensions



SOT23 Package		
Dim	Min	Max
A	0.90	1.15
A1	0.00	0.10
b	0.30	0.50
c	0.08	0.15
D	2.80	3.00
E	1.20	1.40
e	1.80	2.00
L	0.55 REF	
HE	2.25	2.55
All Dimensions in mm		

Suggested Soldering Pad Layout



Note:

- 1.The pad layout is for reference purposes only.
- 2.General tolerance $\pm 0.05\text{mm}$



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