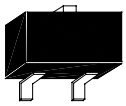
H2N7002

N-CHANNEL TRANSISTOR



SOT-23

Description

N-channel enhancement-mode MOS transistor.

Absolute Maximum Ratings

Drain-Source Voltage ..... 60 V
Drain-Gate Voltage (RGS=1MΩ) ..... 60 V
Gate-Source Voltage ..... +/-40 V
Continuous Drain Current (Ta=25°C)(1) ..... 200 mA
Continuous Drain Current (Ta=100°C)(1) ..... 115 mA
Pulsed Drain Current (Ta=25°C)(2) ..... 800 mA
Total Power Dissipation (Tc=25°C) ..... 200 mW
Derate above 25°C ..... 0.16 Mw / °C
Storage Temperature ..... -55 to 150 °C
Operating Junction Temperature ..... -55 to 150 °C
Lead Temperature, for 10 second Soldering ..... 260 °C

Thermal Characteristics

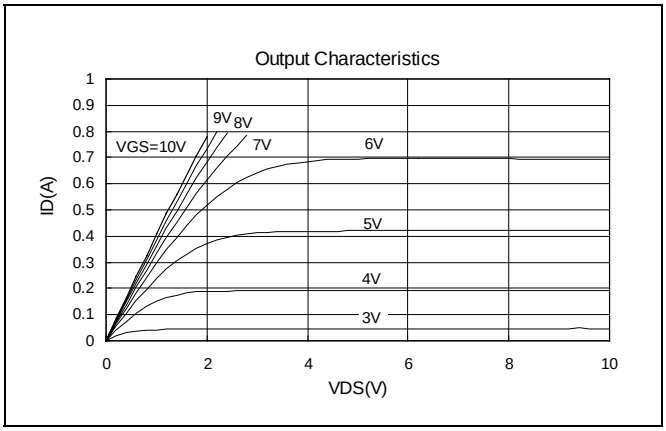
Thermal Resistance, Junction-to-Ambient ..... 625 °C / W

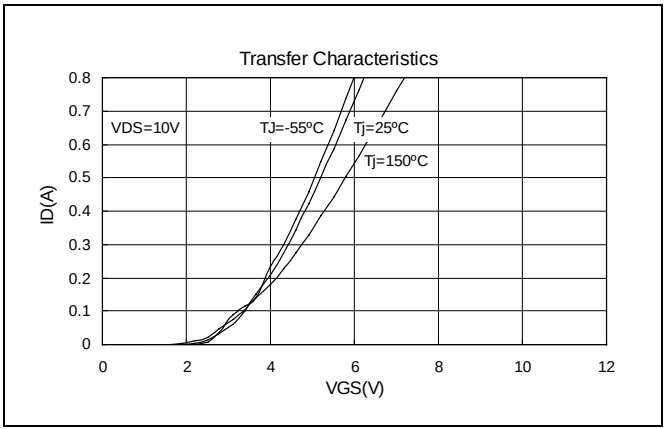
Characteristics (Ta=25°C)

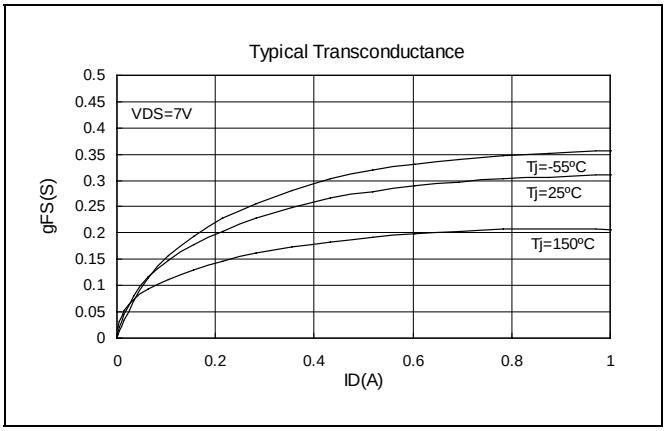
Parameter	Symbol	Test Conditions	Min	Typ.	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0, I_D=10uA	60	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=2.5V, I_D=0.25mA	1	-	2.5	V
Gate Source Leakage Current, Forward	$I_{GSS/F}$	V_{GS}=+20V, V_{DS}=0	-	-	100	nA
Gate Source leakage Current, Reverse	$I_{GSS/R}$	V_{GS}=-20V, V_{DS}=0	-	-	100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V, V_{GS}=0	-	-	1	uA
On-State Drain Current	$I_{D(ON)}$	V_{DS}>2$V_{DS(ON)}$, V_{GS}=10V	500	-	-	mA
Static Drain-Source On-State Voltage	$V_{DS(ON)}$	I_D=50mA, V_{GS}=5V	-	-	0.375	V
		I_D=500mA, V_{GS}=10V	-	-	3.75	V
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	I_D=50mA, V_{GS}=5V	-	-	7.5	Ω
		I_D=500mA, V_{GS}=10V	-	-	7.5	Ω
Forward Transconductance	G_{FS}	V_{DS}>2$V_{DS(ON)}$, I_D=200mA	80	-	-	mS
Input Capacitance	Ciss	V_{DS}=25V, V_{GS}=0, f=1MHz	-	-	50	pF
Output Capacitance	Coss		-	-	25	pF
Reverse Transfer Capacitance	Crss		-	-	5	pF

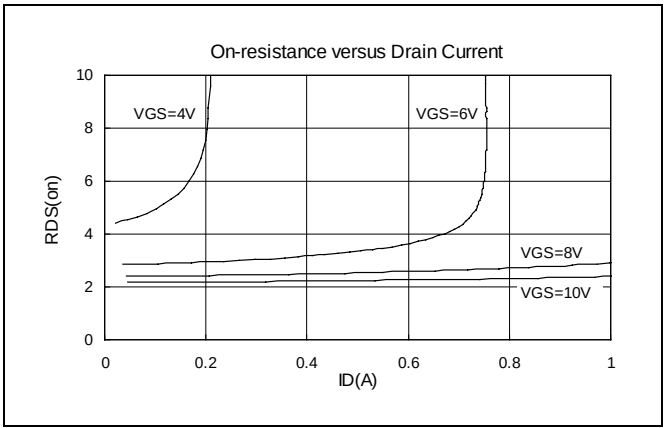
(1)The Power Dissipation of the package may result in a continuous drain current.
(2)Pulse Width≤300us, Duty cycle≥2%.

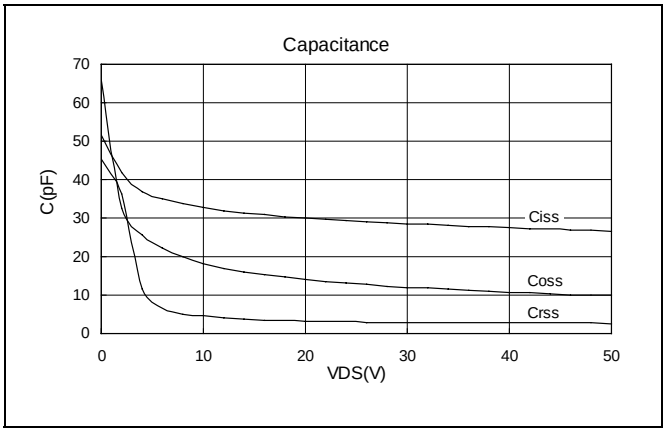
Characteristics Curve

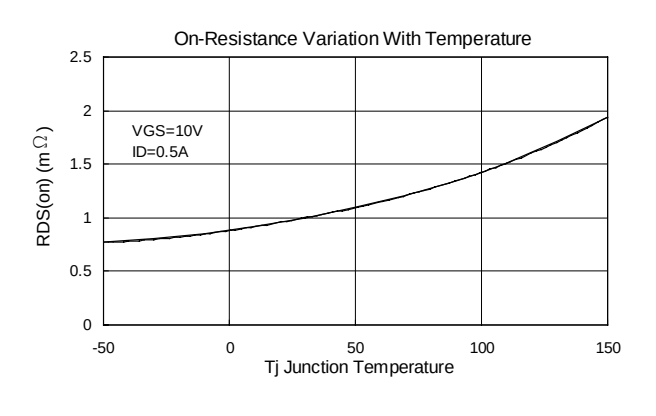


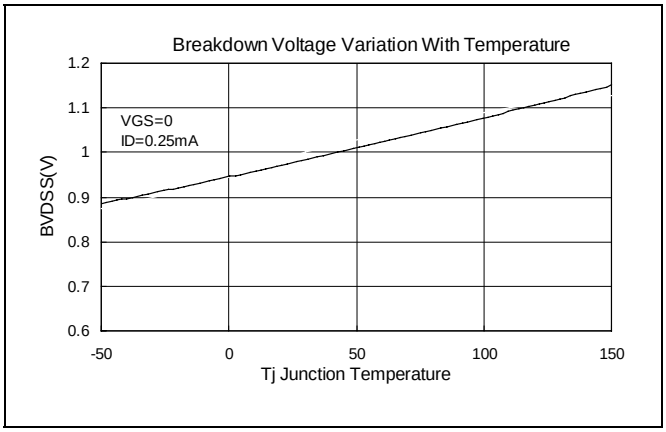


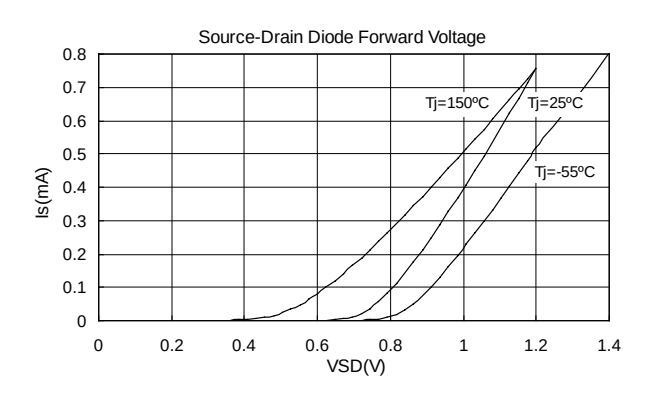


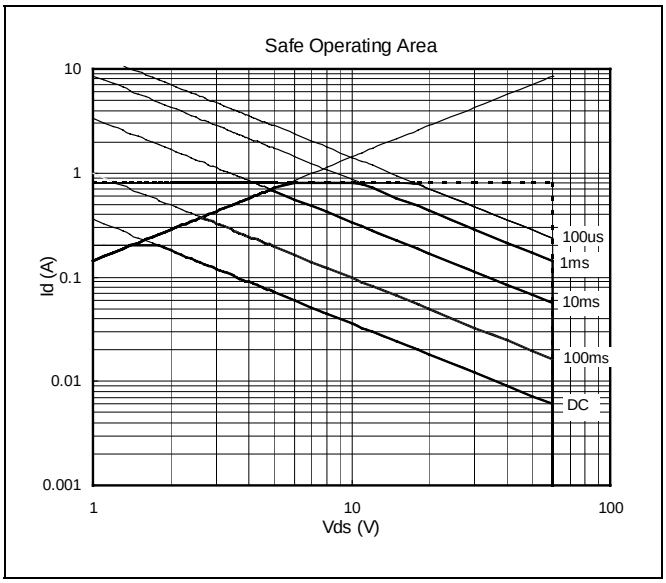


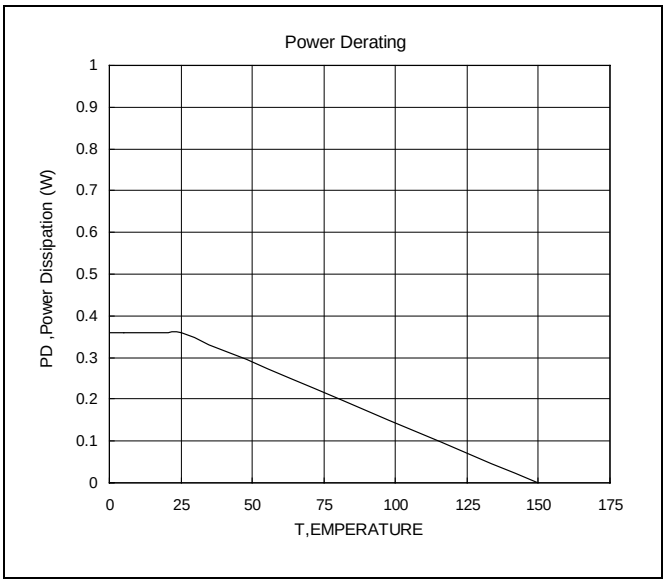


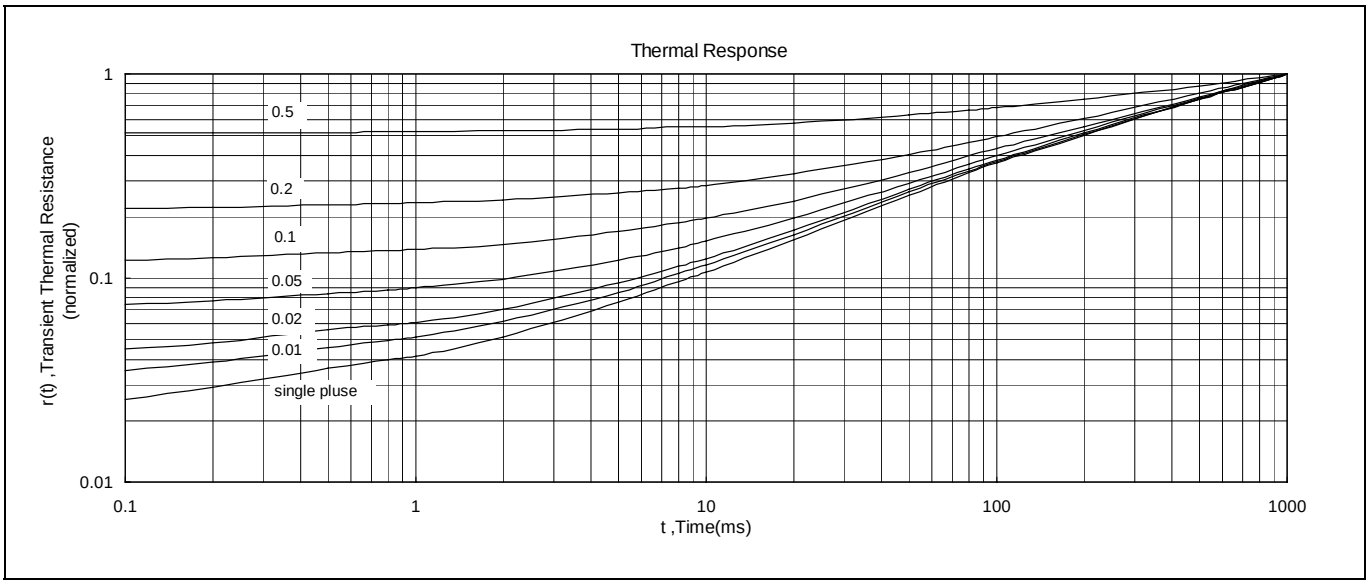




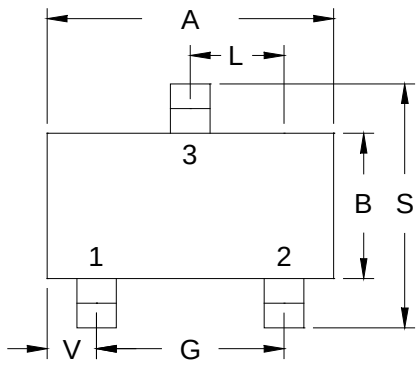


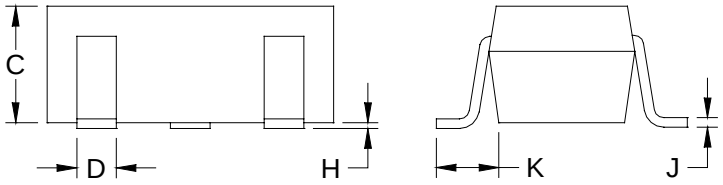

Safe Operating Area
10
1
0.1
0.01
0.001
Id (A)
1
10
100
Vds (V)
100us
1ms
10ms
100ms
DC


Power Derating
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
PD ,Power Dissipation (W)
0
25
50
75
100
125
150
175
T,EMPERATURE

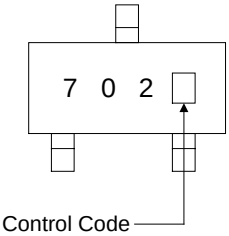

Thermal Response
1
0.1
0.01
r(t) ,Transient Thermal Resistance
(normalized)
0.5
0.2
0.1
0.05
0.02
0.01
single pluse
0.1
1
10
100
1000
t ,Time(ms)

SOT-23 Dimension





Marking:



3-Lead SOT-23 Plastic
Surface Mounted Package
HSMC Package Code: N

Style: Pin 1.Gate 2.Source 3.Drain

*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1102	0.1204	2.80	3.04	J	0.0034	0.0070	0.085	0.177
B	0.0472	0.0630	1.20	1.60	K	0.0128	0.0266	0.32	0.67
C	0.0335	0.0512	0.89	1.30	L	0.0335	0.0453	0.85	1.15
D	0.0118	0.0197	0.30	0.50	S	0.0830	0.1083	2.10	2.75
G	0.0669	0.0910	1.70	2.30	V	0.0098	0.0256	0.25	0.65
H	0.0005	0.0040	0.013	0.10					

Notes: 1.Dimension and tolerance based on our Spec. dated Sep. 07,1997.
2.Controlling dimension: millimeters.
3.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
4.If there is any question with packing specification or packing method, please contact your local HSMC sales office.

Material:

- Lead: 42 Alloy; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

Head Office And Factory:

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  Tel: 886-3-5983621~5 Fax: 886-3-5982931