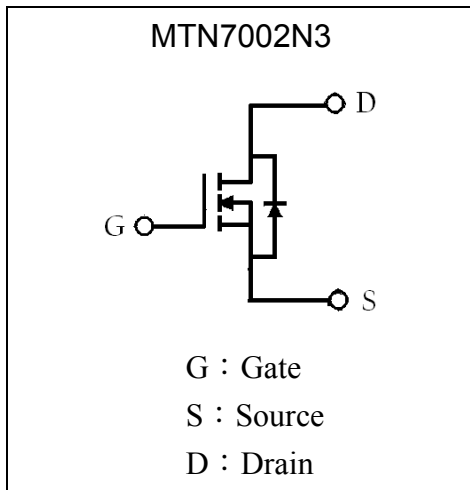
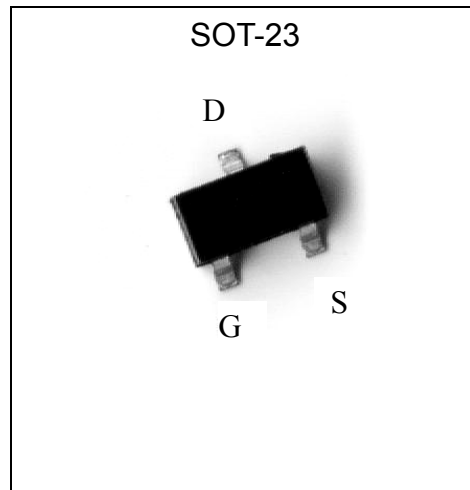


**N-CHANNEL MOSFET**

# MTN7002N3

**Description**

- The MTN7002N3 is a N-channel enhancement-mode MOSFET.
- Pb-free package

**Symbol**

**Outline**

**Absolute Maximum Ratings** (Ta=25°C)

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	BV <sub>DSS</sub>	60	V
Drain-Gate Voltage (R <sub>GS</sub> =1MΩ)	BV <sub>DGR</sub>	60	V
Gate-Source Voltage	V <sub>GS</sub>	±40	V
Continuous Drain Current (Ta=25°C)	I <sub>D</sub>	200 *1	mA
Continuous Drain Current (Ta=100°C)	I <sub>D</sub>	115 *1	mA
Pulsed Drain Current (Ta=25°C)	I <sub>DM</sub>	800 *2	mA
Total Power Dissipation (Ta=25°C)	P <sub>D</sub>	200	mW
Total Power Dissipation (Tc=25°C)		500	
Operating Junction Temperature	T <sub>j</sub>	-55~+150	°C
Storage Temperature	T <sub>stg</sub>	-55~+150	°C
Thermal Resistance, Junction-to-Ambient	R <sub>th,ja</sub>	625	°C/W
Thermal Resistance, Junction-to-Case	R <sub>th,jc</sub>	250	°C/W
Lead Temperature, for 10 second Soldering	T <sub>L</sub>	240	°C

Note : \*1. The power dissipation of the package may result in a continuous drain current

\*2. Pulse Width ≤ 300μs, Duty cycle ≤ 2%



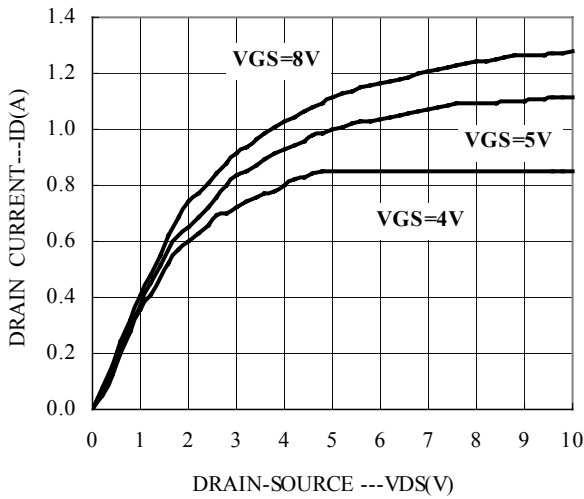
**Electrical Characteristics (Ta=25°C)**

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV <sub>DSS</sub>	60	-	-	V	V <sub>GS</sub> =0, I <sub>D</sub> =10μA
V <sub>GS(th)</sub>	1	-	2.5	V	V <sub>DS</sub> =2.5V, I <sub>D</sub> =0.25mA
I <sub>GSS/F</sub>	-	-	100	nA	V <sub>GS</sub> =+20V, V <sub>DS</sub> =0
I <sub>GSS/R</sub>	-	-	-100	nA	V <sub>GS</sub> =-20V, V <sub>DS</sub> =0
I <sub>DSS</sub>	-	-	1	μA	V <sub>DS</sub> =60V, V <sub>GS</sub> =0
I <sub>D(ON)</sub>	500	-	-	mA	V <sub>DS</sub> >2V <sub>DS(ON)</sub> , V <sub>GS</sub> =10V
V <sub>DS(ON)</sub>	-	-	0.375	V	I <sub>D</sub> =50mA, V <sub>GS</sub> =5V
	-	-	3.75	V	I <sub>D</sub> =500mA, V <sub>GS</sub> =10V
R <sub>DS(ON)</sub>	-	-	7.5	Ω	I <sub>D</sub> =50mA, V <sub>GS</sub> =5V
	-	-	7.5		I <sub>D</sub> =500mA, V <sub>GS</sub> =10V
G <sub>FS</sub>	80	-	-	mS	V <sub>DS</sub> >2V <sub>DS(ON)</sub> , I <sub>D</sub> =200mA
C <sub>iss</sub>	-	-	50	pF	V <sub>DS</sub> =25V, V <sub>GS</sub> =0, f=1MHz
C <sub>oss</sub>	-	-	25		
C <sub>rss</sub>	-	-	5		

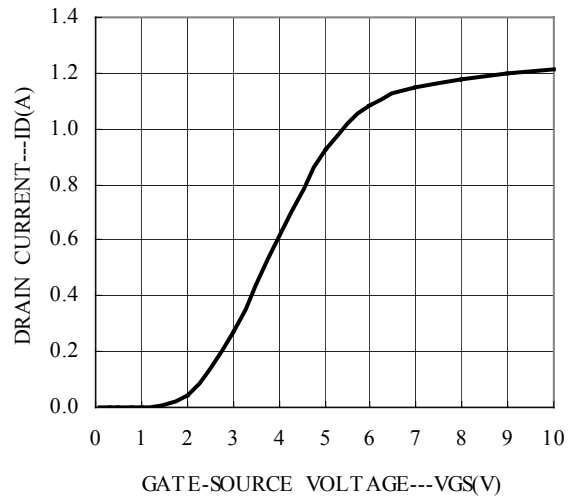
\*Pulse Test : Pulse Width ≤380μs, Duty Cycle≤2%

**Characteristic Curves**

TYPICAL OUTPUT CHARACTERISTICS

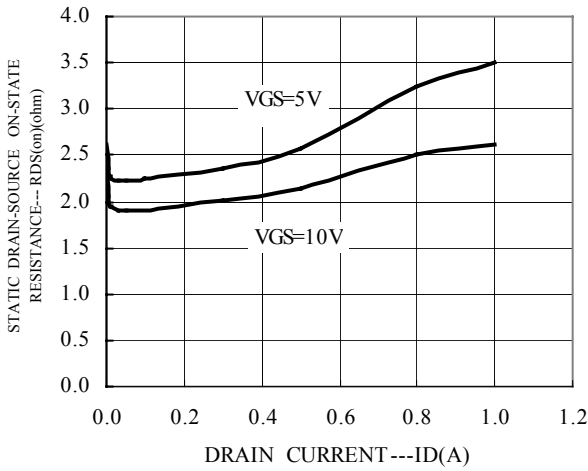


TYPICAL TRANSFER CHARACTERISTIC

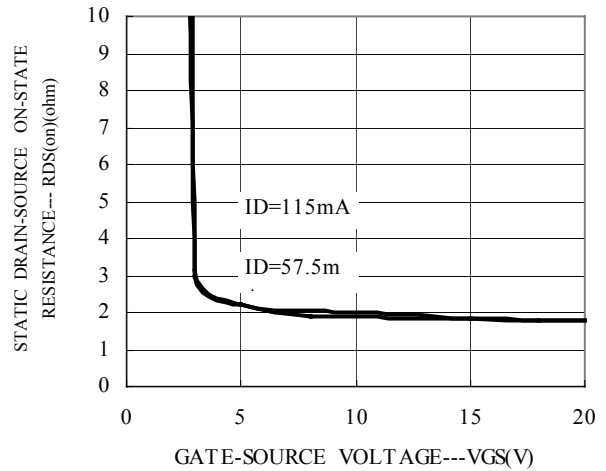




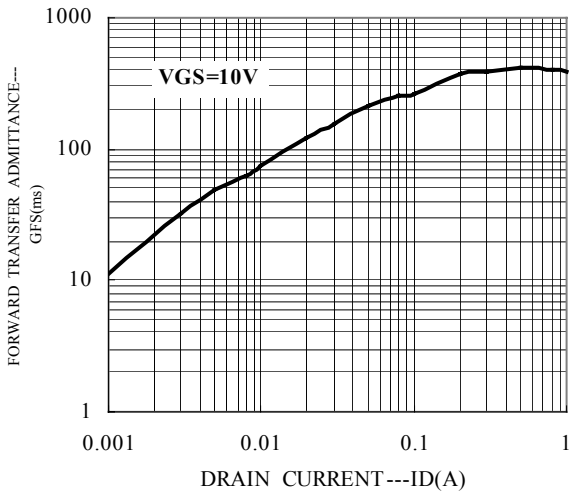
STATIC DRAIN-SOURCE ON-STATE RESISTANCE vs DRAIN CURRENT



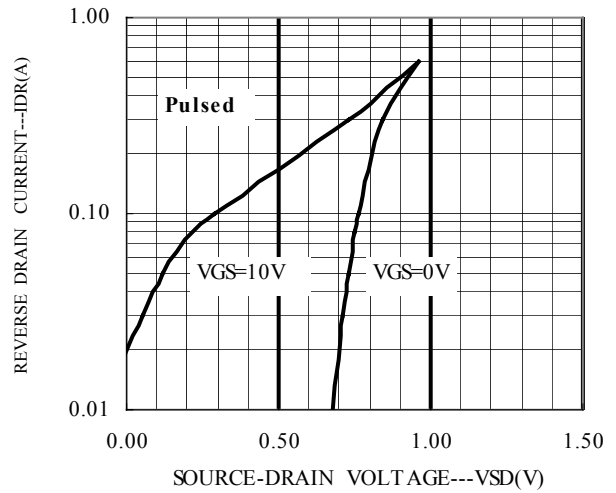
STATIC DRAIN-SOURCE ON-STATE RESISTANCE VS GATE-SOURCE VOLTAGE



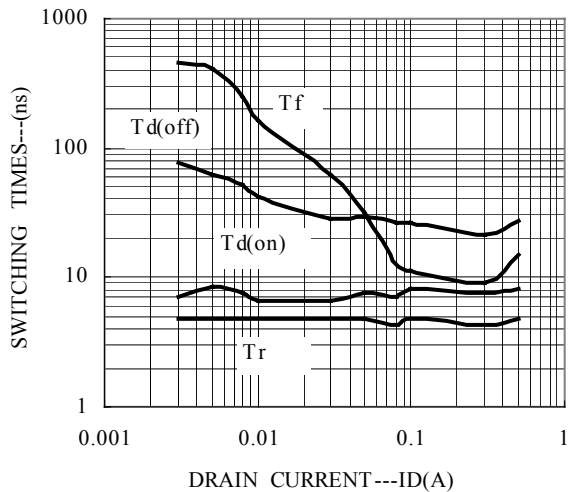
FORWARD TRANSFER ADMITTANCE vs DRAIN CURRENT



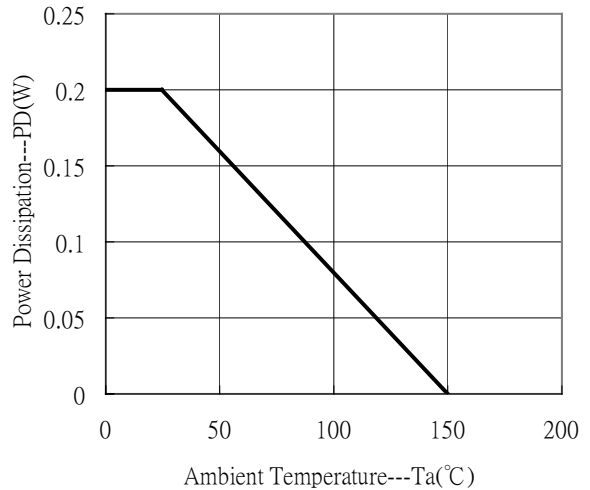
REVERSE DRAIN CURRENT vs SOURCE-DRAIN VOLTAGE



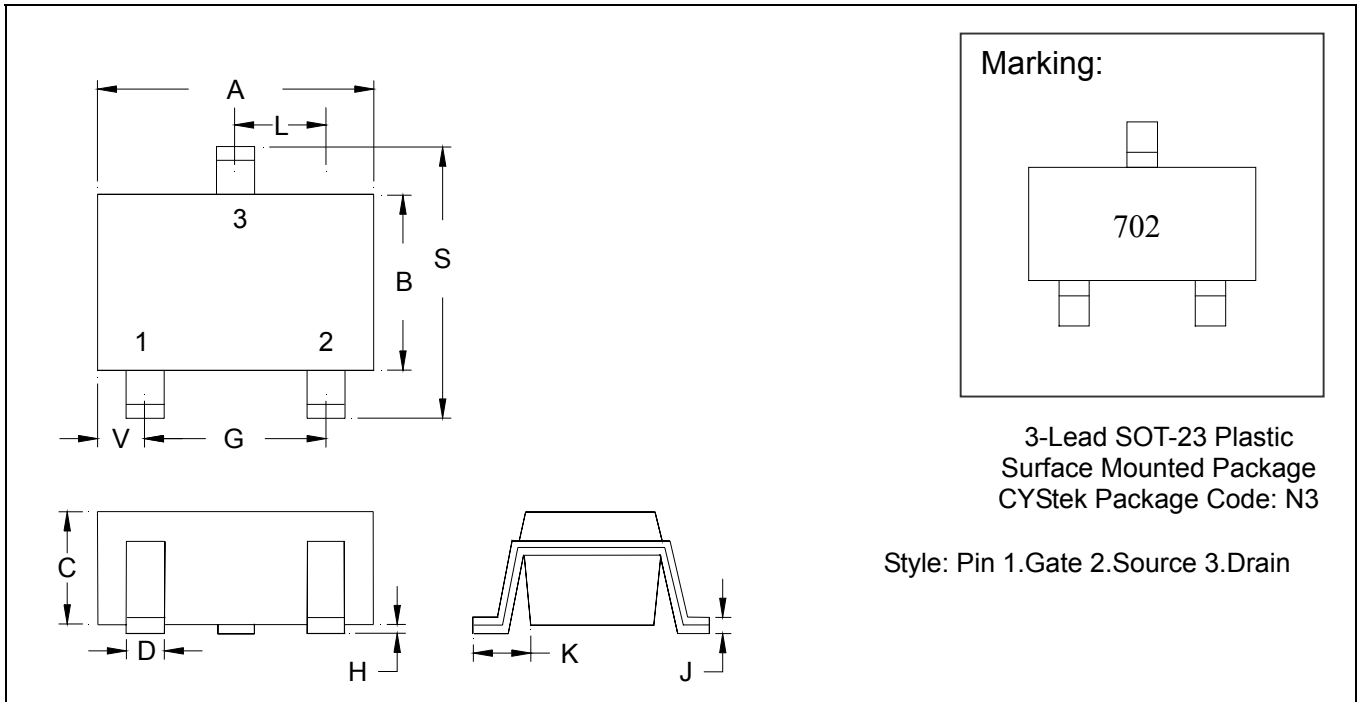
SWITCHING CHARACTERISTICS



Power Derating Curve



**SOT-23 Dimension**



\*: 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:**
- Controlling dimension: millimeters.
  - Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
  - If there is any question with packing specification or packing method, please contact your local CYStek sales office.

**Material:**

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

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