

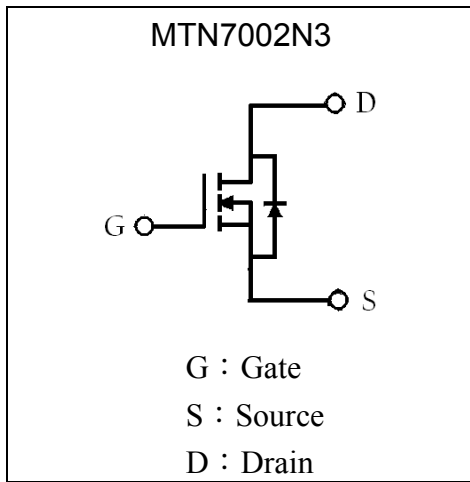
N-CHANNEL MOSFET

MTN7002N3

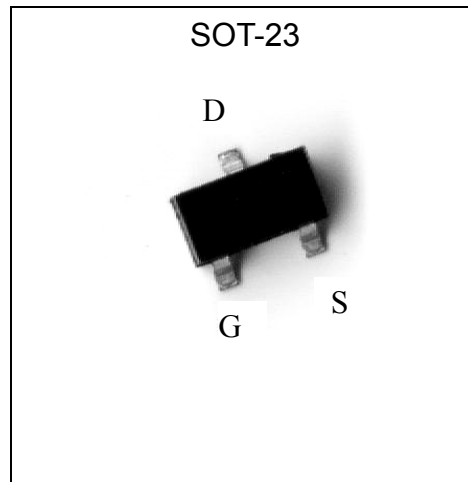
Description

The MTN7002N3 is a N-channel enhancement-mode MOSFET.

Symbol



Outline



Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	BV _{DSS}	60	V
Drain-Gate Voltage (R _{Gs} =1MΩ)	BV _{DGR}	60	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current (Ta=25°C)	I _D	200 *1	mA
Continuous Drain Current (Ta=100°C)	I _D	115 *1	mA
Pulsed Drain Current (Ta=25°C)	I _{DM}	800 *2	mA
Total Power Dissipation (Ta=25°C)	P _D	200	mW
Total Power Dissipation (Tc=25°C)		500	
Operating Junction Temperature	T _j	-55~+150	°C
Storage Temperature	T _{stg}	-55~+150	°C
Thermal Resistance, Junction-to-Ambient	R _{th,ja}	625	°C/W
Thermal Resistance, Junction-to-Case	R _{th,jc}	250	°C/W
Lead Temperature, for 10 second Soldering	T _L	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 _{DSS}	60	-	-	V	V _{GS} =0, I _D =10μA
V _{GS(th)}	1	-	2.5	V	V _{DS} =2.5V, I _D =0.25mA
I _{GSS/F}	-	-	100	nA	V _{GS} =+20V, V _{DS} =0
I _{GSS/R}	-	-	-100	nA	V _{GS} =-20V, V _{DS} =0
I _{DSS}	-	-	1	μA	V _{DS} =60V, V _{GS} =0
I _{D(ON)}	500	-	-	mA	V _{DS} >2V _{DS(ON)} , V _{GS} =10V
V _{DS(ON)}	-	-	0.375	V	I _D =50mA, V _{GS} =5V
	-	-	3.75	V	I _D =500mA, V _{GS} =10V
R _{DS(ON)}	-	-	7.5	Ω	I _D =50mA, V _{GS} =5V
	-	-	7.5		I _D =500mA, V _{GS} =10V
G _{FS}	80	-	-	mS	V _{DS} >2V _{DS(ON)} , I _D =200mA
C _{iss}	-	-	50	pF	V _{DS} =25V, V _{GS} =0, f=1MHz
C _{oss}	-	-	25		
C _{rss}	-	-	5		

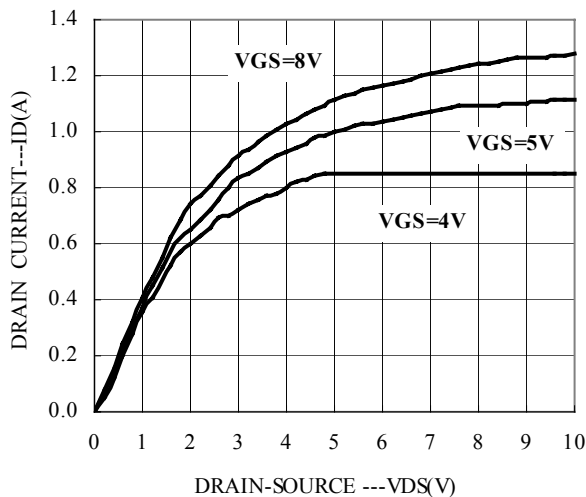
*Pulse Test : Pulse Width ≤380μs, Duty Cycle≤2%

Ordering Information

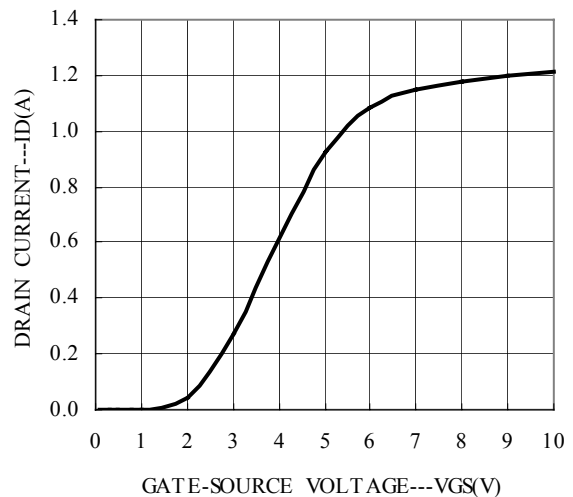
Device	Package	Shipping	Marking
MTN7002N3	SOT-23	3000 pcs / Tape & Reel	702

Characteristic Curves

TYPICAL OUTPUT CHARACTERISTICS



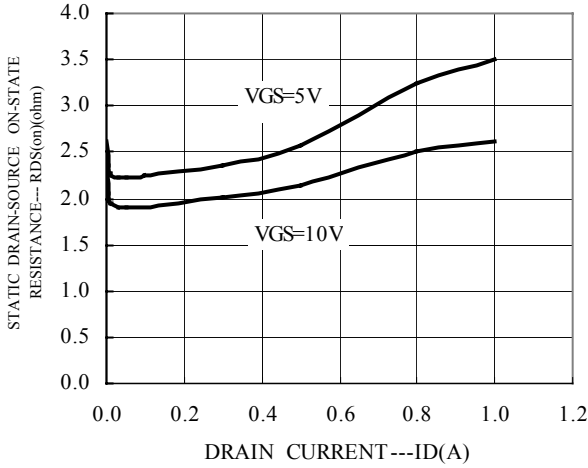
TYPICAL TRANSFER CHARACTERISTIC



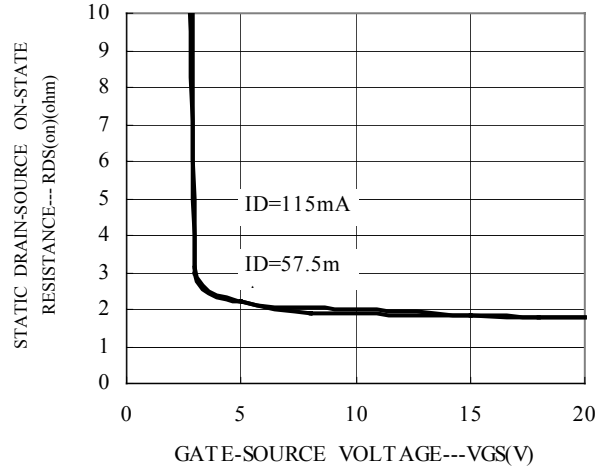


Characteristic Curves(Cont.)

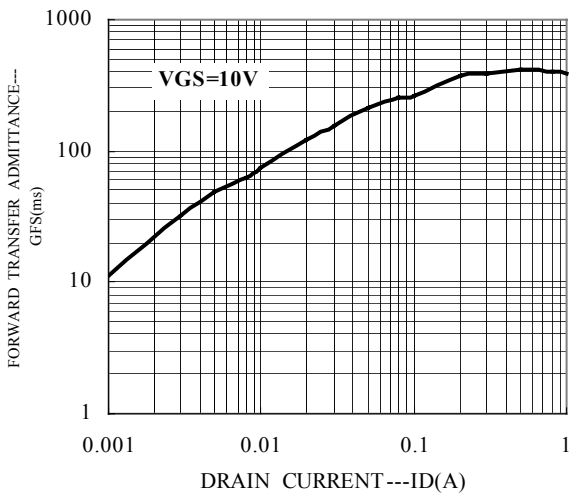
STATIC DRAIN-SOURCE ON-STATE RESISTANCE vs DRAIN CURRENT



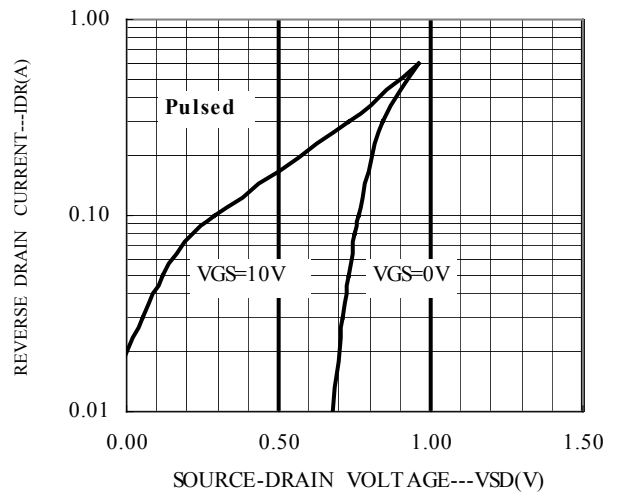
STATIC DRAIN-SOURCE ON-STATE RESISTANCE VS GATE-SOURCE VOLTAGE



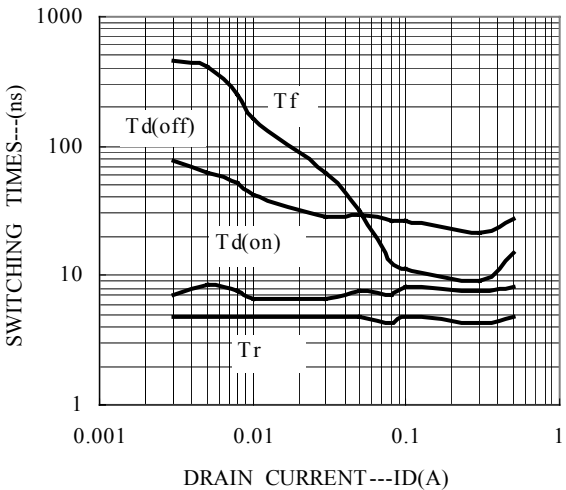
FORWARD TRANSFER ADMITTANCE vs DRAIN CURRENT



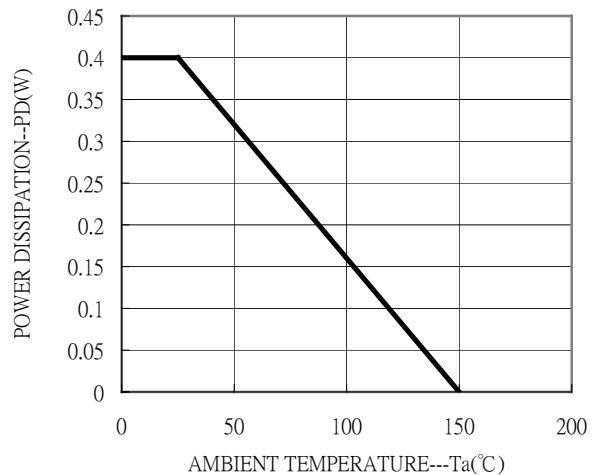
REVERSE DRAIN CURRENT vs SOURCE-DRAIN VOLTAGE



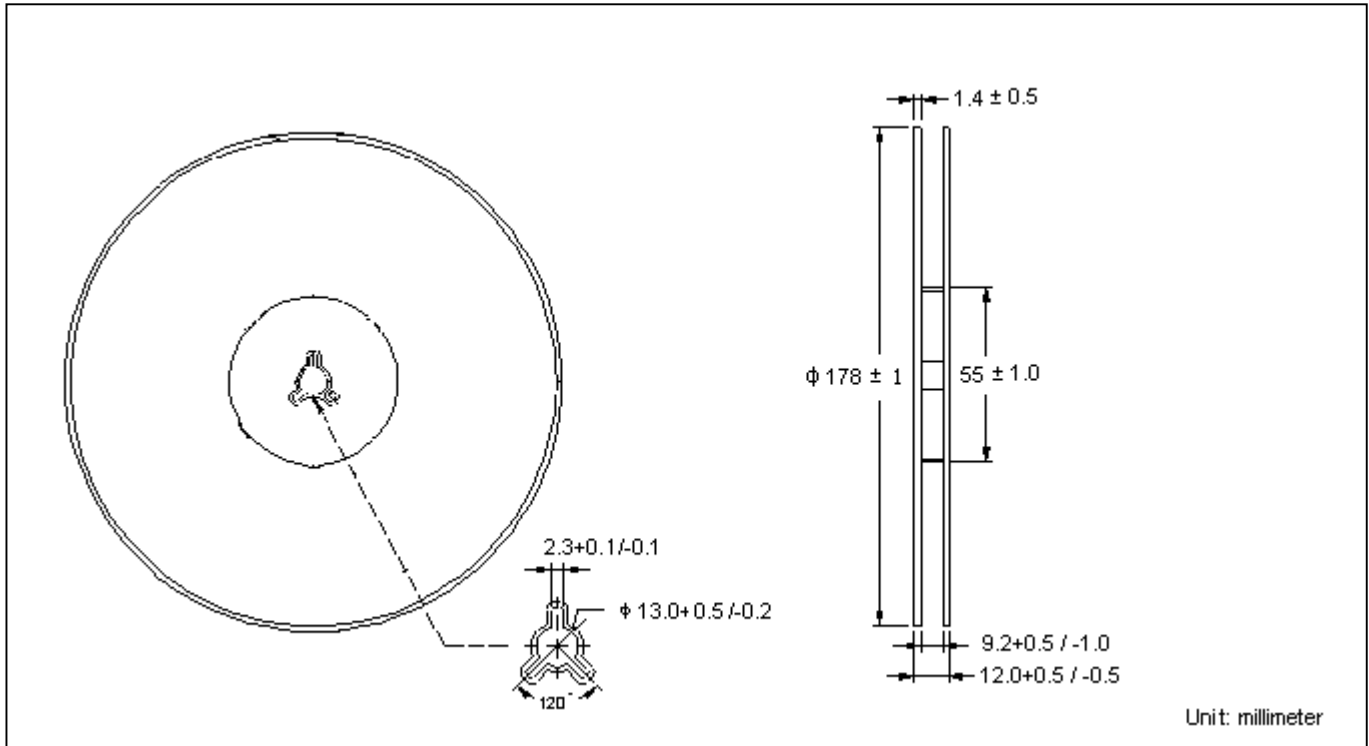
SWITCHING CHARACTERISTICS



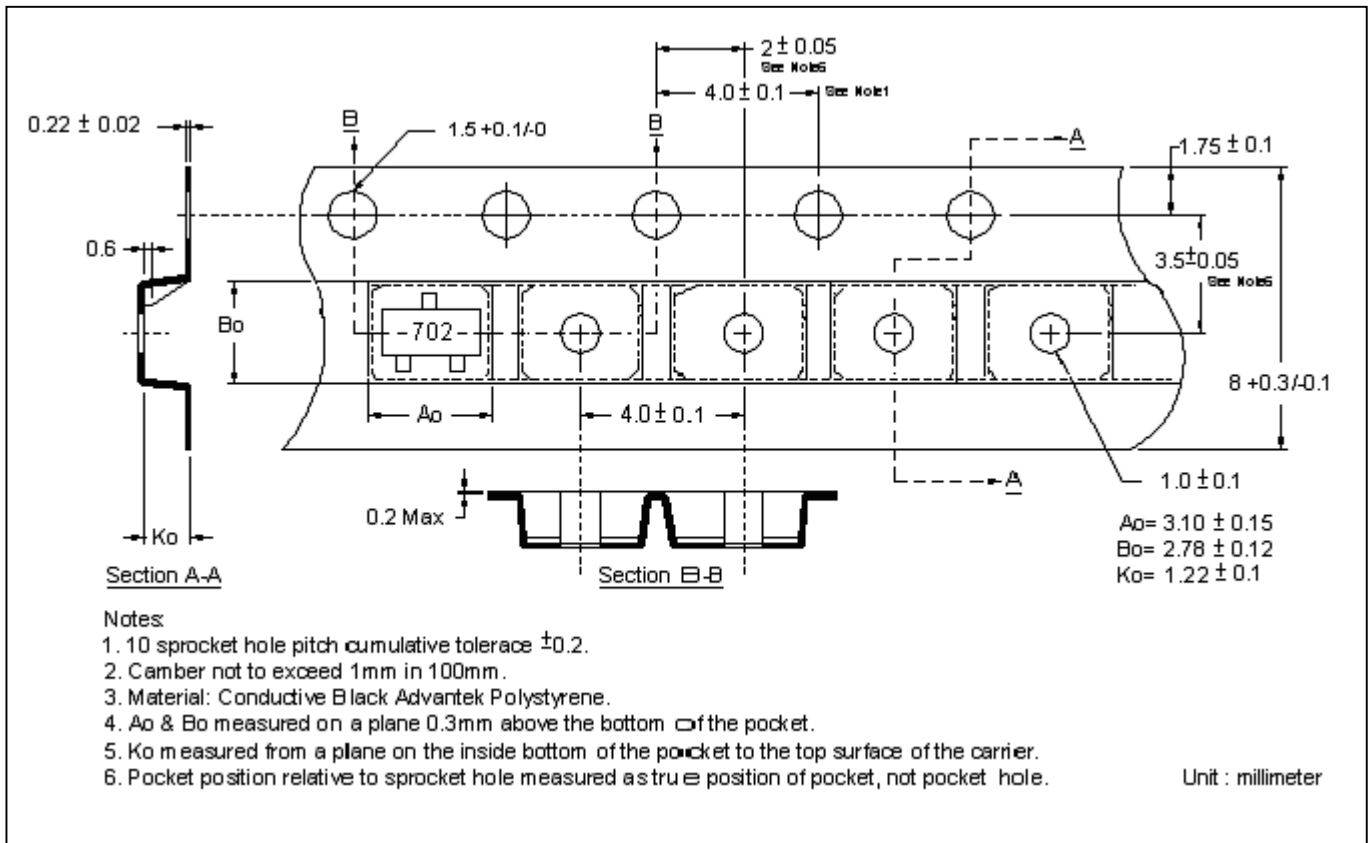
POWER DERATING CURVE



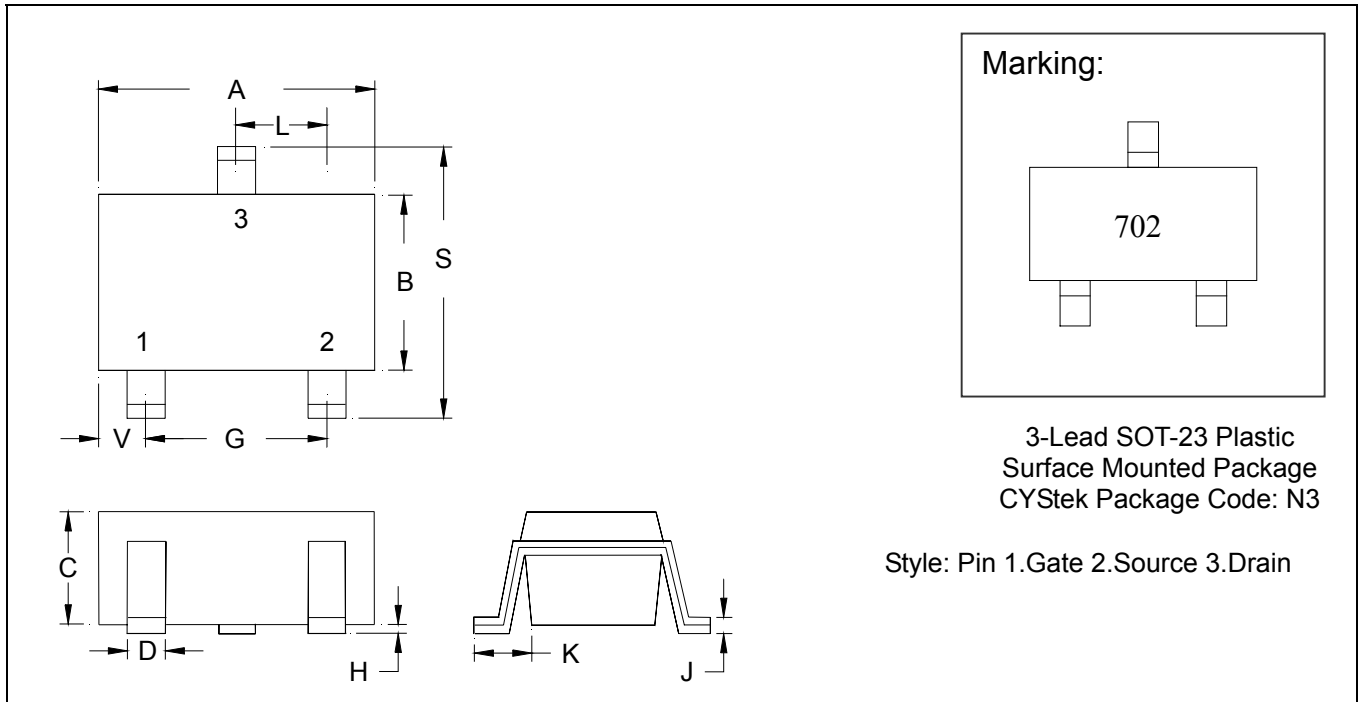
Reel Dimension



Carrier Tape Dimension



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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