N-CHANNEL MOSFET

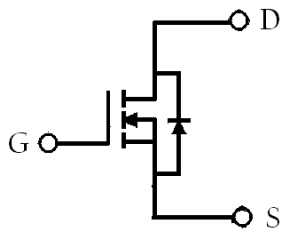
MTN7000A3

Description

The MTN7000A3 is a N-channel enhancement-mode MOSFET.

Symbol

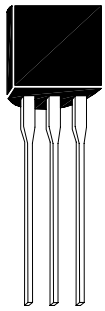
MTN7000A3



G：Gate
S：Source
D：Drain

Outline

TO-92



S G D

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	V_{DSS}	60	V
Drain-Gate Voltage (R_{GS}=1MΩ)	V_{DGR}	60	V
Gate-Source Voltage ---Continuous ---Non–repetitive(tp ≤50μs)	V_{GS} V_{GSM}	±20 ±40	V V
Continuous Drain Current (Ta=25°C)	I_D	200	mA
Continuous Drain Current (Ta=100°C)	I_D	130	mA
Pulsed Drain Current (Ta=25°C)	I_{DM}	500 *1	mA
Total Power Dissipation (Ta=25°C) Derate Above 25°C	Pd	400 3.2	mW mW/°C
Operating Junction Temperature	Tj	-55~+150	°C
Storage Temperature	Tstg	-55~+150	°C
Thermal Resistance, Junction-to-Ambient	Rth,ja	312.5	°C/W
Lead Temperature, for 10 second Soldering	T_L	260	°C

Note : *1. Pulse Width ≤ 300μs, Duty cycle ≤2%

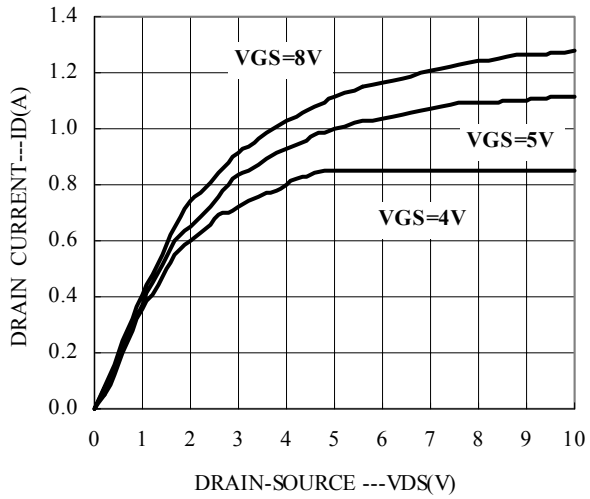
Electrical Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{DSS}	60			V	V_{GS}=0, I_D=10μA
$V_{GS(th)}$	0.8		3	V	V_{DS}=V_{GS}, I_D=1.0mA
$I_{GSS/F}$			10	nA	V_{GS}=+15V, V_{DS}=0
$I_{GSS/R}$			-10	nA	V_{GS}=-15V, V_{DS}=0
I_{DSS}			1	μA	V_{DS}=48V, V_{GS}=0
$I_{D(ON)}$	75			mA	V_{DS}=10V, V_{GS}=4.5V
$R_{DS(ON)}$			5.3	Ω	I_D=75mA, V_{GS}=4.5V
			5		I_D=75mA, V_{GS}=10V
G_{FS}	100	-	-	mS	V_{DS}=10V, I_D=200mA
C_{iss}	-	-	60	pF	V_{DS}=25V, V_{GS}=0, f=1MHz
C_{oss}	-	-	25		
C_{rss}	-	-	5		

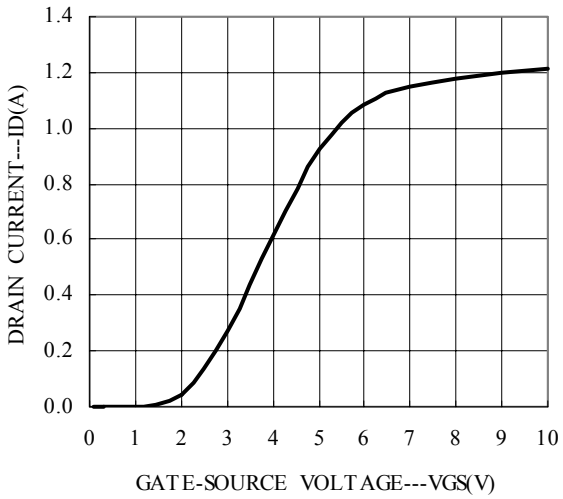
*Pulse Test : Pulse Width ≤380μs, Duty Cycle≤2%

Characteristic Curves

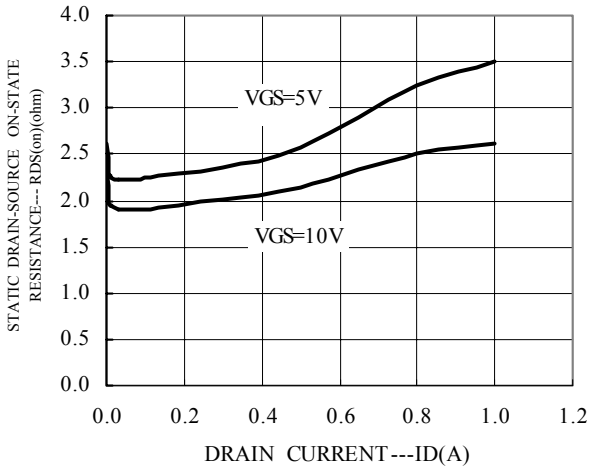
TYPICAL OUTPUT CHARACTERISICS



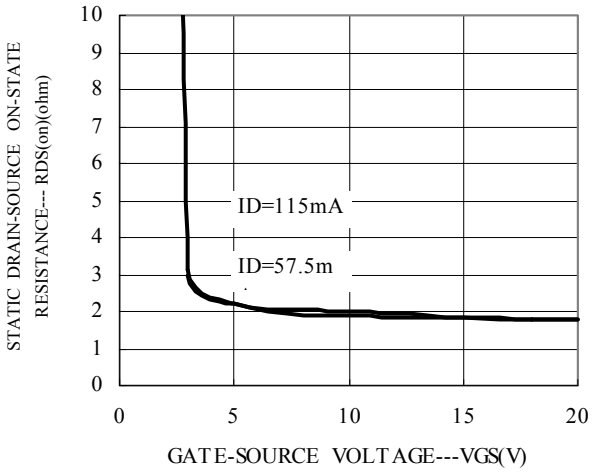
TYTICAL TRANSFER CHARACTERISTIC



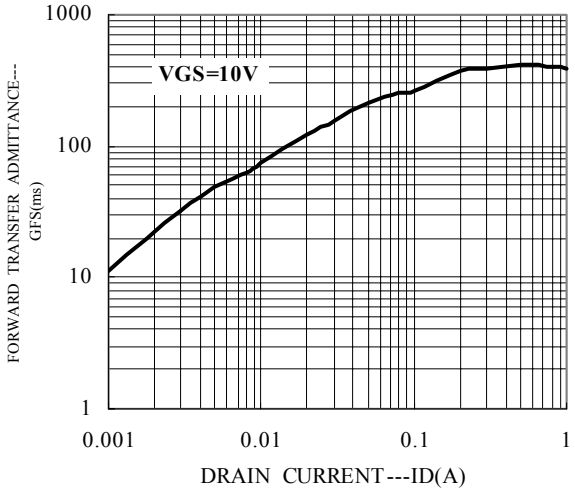
STATIC DRAIN-SOURCE ON-STATE RESISTANCE vs DRAIN CURRENT



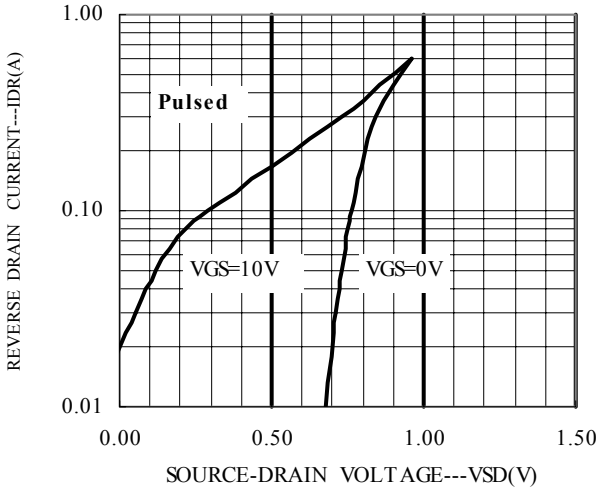
STATIC DRAIN-SOURCE ON-STATE RESISTANCE VS GATE-SOURCE VOLTSAGE



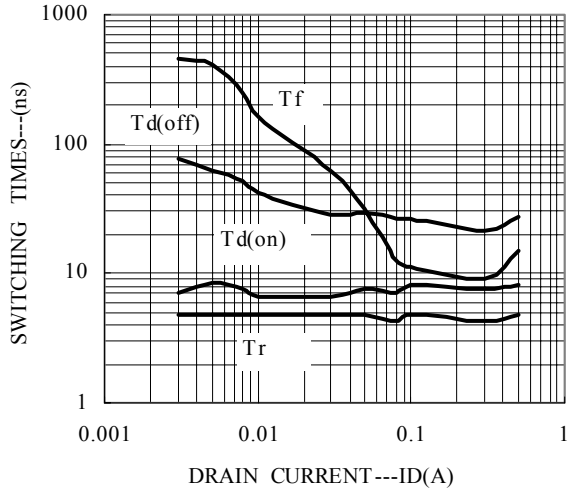
FORWARD TRANSFER ADMITTANCE vs DRAIN CURRENT



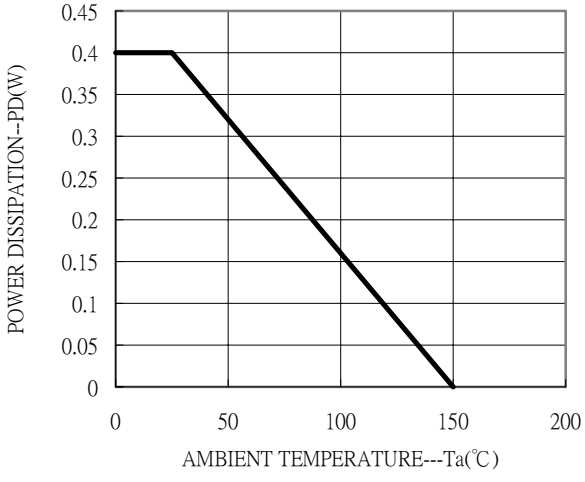
REVERSE DRAIN CURRENT vs SOURCE-DRAIN VOLTAGE



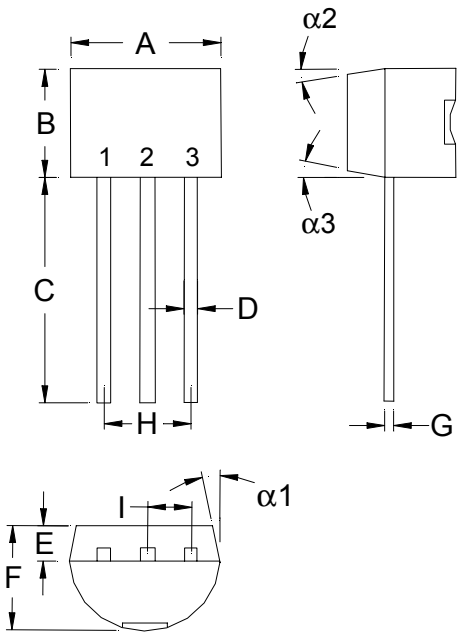
SWITCHING CHARACTERISTICS



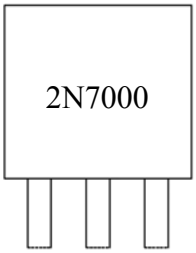
POWER DERATING CURVE



TO-92 Dimension



Marking:



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

3-Lead TO-92 Plastic Package
CYStek Package Code: A3

*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1704	0.1902	4.33	4.83	G	0.0142	0.0220	0.36	0.56
B	0.1704	0.1902	4.33	4.83	H	-	*0.1000	-	*2.54
C	0.5000	-	12.70	-	I	-	*0.0500	-	*1.27
D	0.0142	0.0220	0.36	0.56	α1	-	*5°	-	*5°
E	-	*0.0500	-	*1.27	α2	-	*2°	-	*2°
F	0.1323	0.1480	3.36	3.76	α3	-	*2°	-	*2°

Notes: 1.Controlling dimension: millimeters.
2.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
3.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