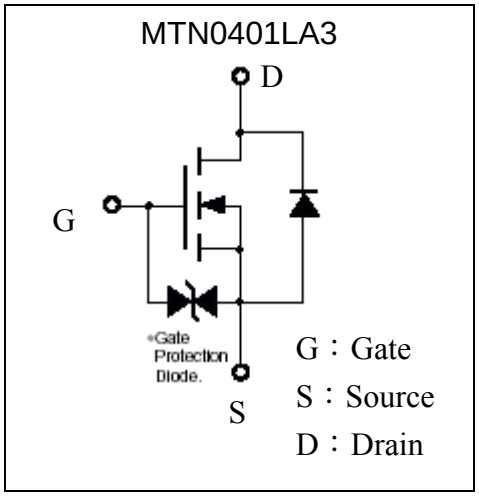
N-Channel MOSFET

MTN0401LA3

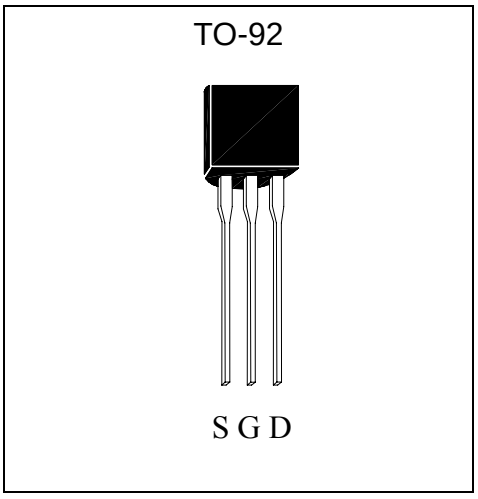
Features

- Low on-resistance
- High ESD
- High speed switching
- Low-voltage drive(4V)
- Easily designed drive circuits
- Easy to use in parallel
- Pb-free lead plating and halogen-free package

Symbol

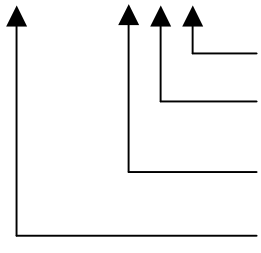


Outline



Ordering Information

Device	Package	Shipping
MTN0401LA3-0-TB-G	TO-92 (Pb-free lead plating and halogen-freepackage)	2000 pcs / Tape & Box
MTN0401LA3-0-BK-G	TO-92 (Pb-free lead plating and halogen-free package)	1000 pcs/ bag, 10 bags/box, 10boxes/carton



Environment friendly grade : S for RoHS compliant products, G for RoHS compliant and green compound products

Packing spec, TB :2000 pcs/tape & box; BK: 1000 pcs / bag, 10 bags/box, 10 boxes/carton

Product rank, zero for no rank products

Product name

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	V_{DSS}	60	V
Gate-Source Voltage	V_{GSS}	±20	V
Continuous Drain Current (T_A=25°C)	I_D	640	mA
Continuous Drain Current (T_A=100°C)	I_D	380	mA
Pulsed Drain Current (T_A=25°C)	I_{DM}	3 (Note 1)	A
ESD susceptibility		2000 (Note 2)	V
Total Power Dissipation (T_A=25°C) Derate above 25 °C	P_D	800 3.2	mW mW/°C
Operating Junction Temperature	T_J	-55~+150	°C
Storage Temperature	Tstg	-55~+150	°C
Thermal Resistance, Junction to Ambient	$R_{th,JA}$	156	°C/W
Lead Temperature, for 10 second soldering	T_L	260	°C

Note : *1. Pulse Width ≤ 300μs, Duty cycle ≤2%
*2. Human body model, 1.5kΩ in series with 100pF

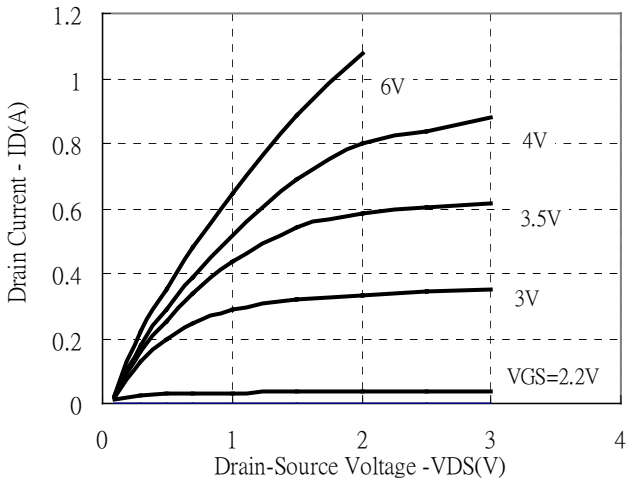
Electrical Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{DSS}	60	-	-	V	V_{GS}=0, I_D=10μA
$V_{GS(th)}$	0.5	-	2.5	V	V_{DS}=V_{GS}, I_D=0.25mA
I_{GSS}	-	-	±10	μA	V_{GS}=±20V, V_{DS}=0
I_{DSS}	-	-	1	μA	V_{DS}=48V, V_{GS}=0
*$I_{D(ON)}$	250	-	-	mA	V_{DS}=10V, V_{GS}=4.5V
*$I_{D(ON)}$	640	-	-	mA	V_{DS}=10V, V_{GS}=10V
*$R_{DS(ON)}$	-	-	5	Ω	I_D=50mA, V_{GS}=3.5V
	-	-	5		I_D=75mA, V_{GS}=4.5V
	-	-	3		I_D=1A, V_{GS}=10V
*G_{FS}	150	-	-	mS	V_{DS}=10V, I_D=200mA
C_{iss}	-	-	60	pF	V_{DS}=15V, V_{GS}=0, f=1MHz
C_{oss}	-	-	50		
C_{rss}	-	-	15		

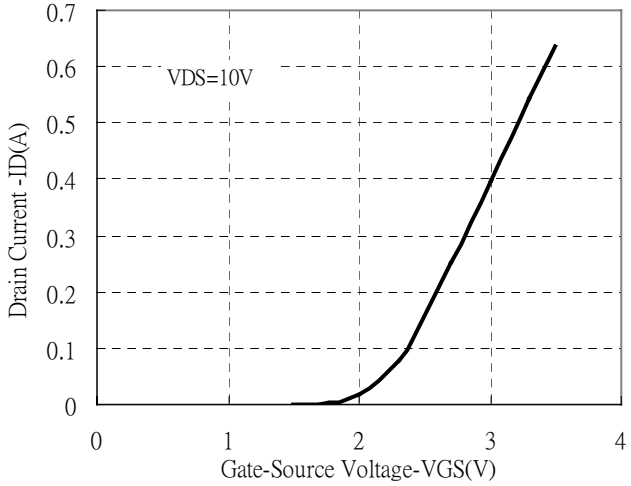
*Pulse Test : Pulse Width ≤380μs, Duty Cycle≤2%

Typical Characteristics

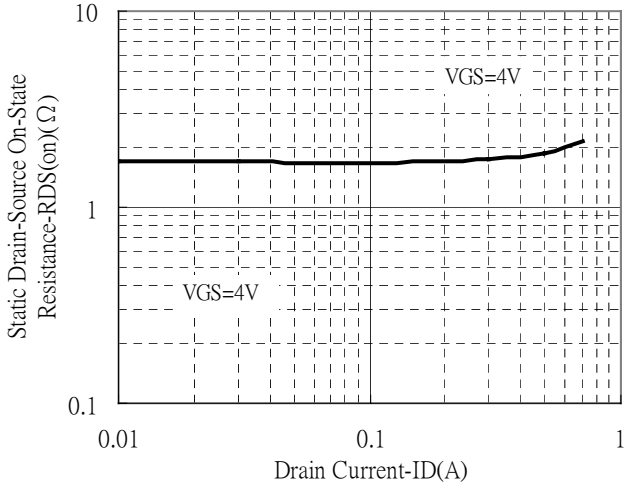
Typical Output Characteristics



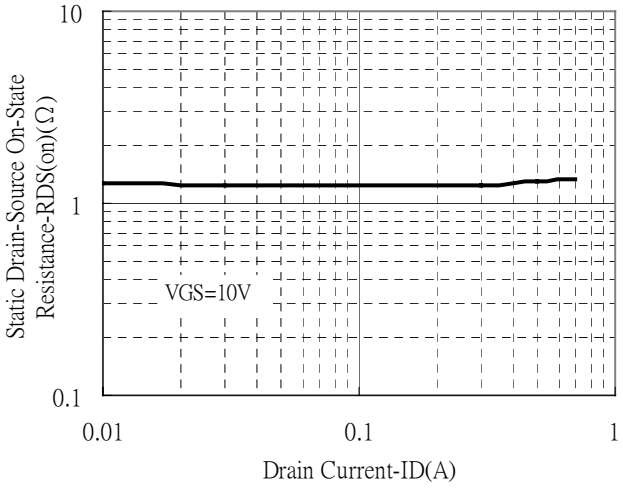
Typical Transfer Characteristics



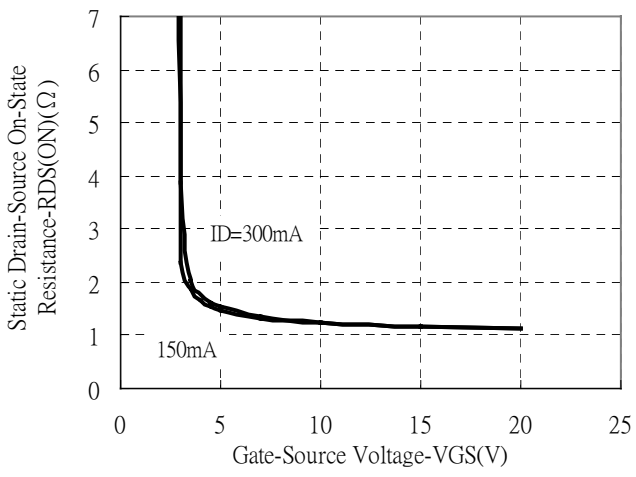
Static Drain-Source On-State resistance vs Drain Current



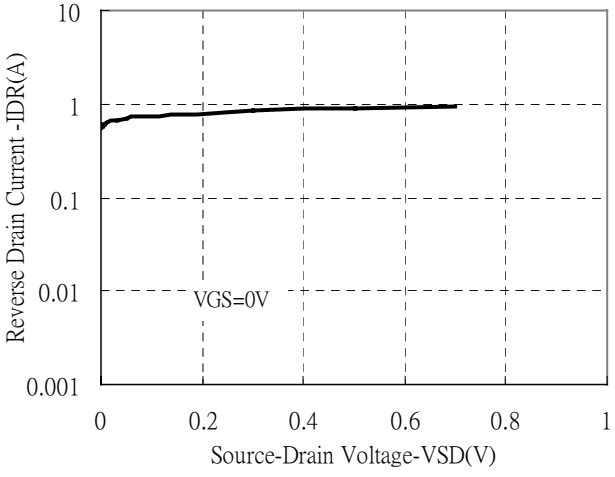
Static Drain-Source On-State resistance vs Drain Current



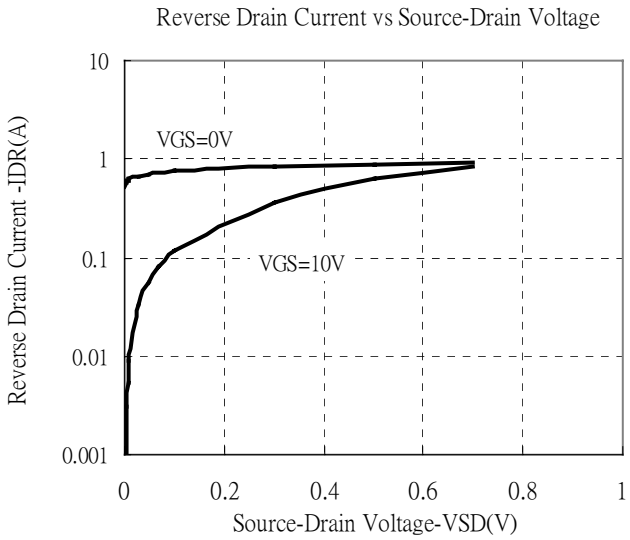
Static Drain-Source On-State Resistance vs Gate-Source Voltage

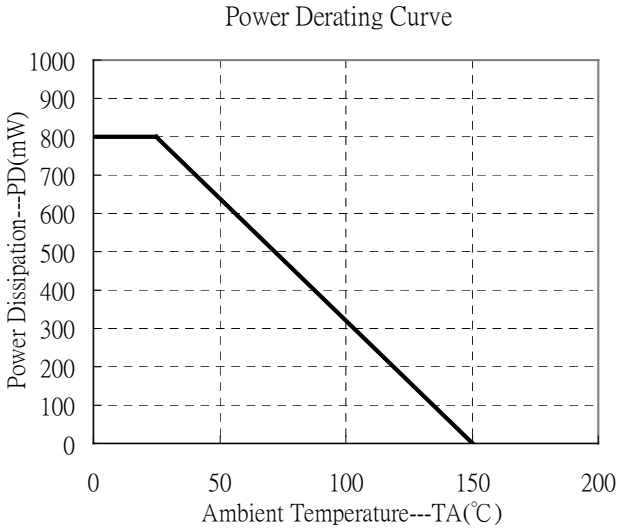


Reverse Drain Current vs Source-Drain Voltage

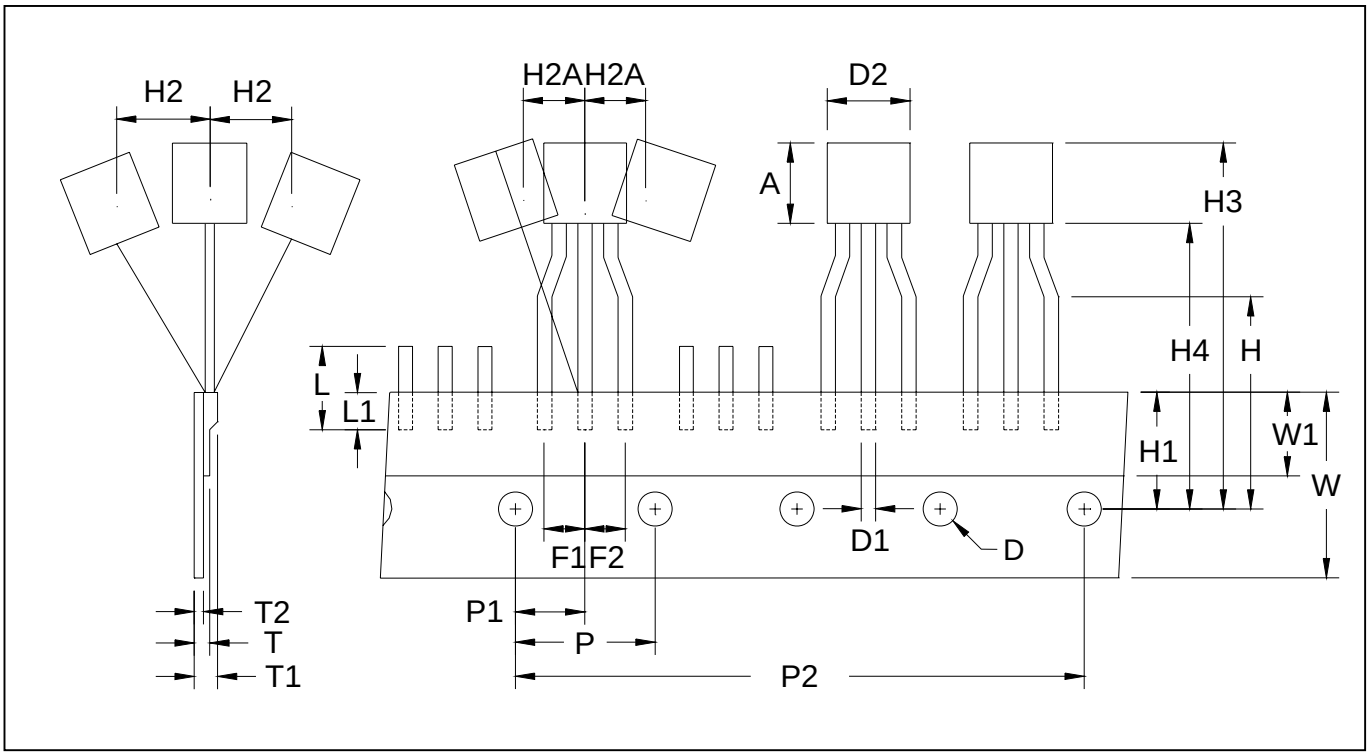


Typical Characteristics(Cont.)



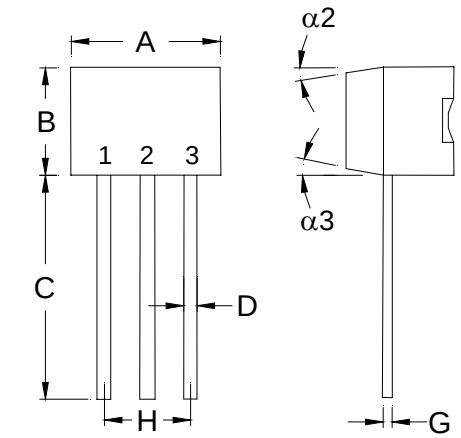


TO-92 Taping Outline

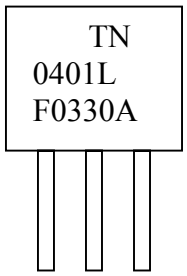


DIM	Item	Millimeters	
		Min.	Max.
A	Component body height	4.33	4.83
D	Tape Feed Diameter	3.80	4.20
D1	Lead Diameter	0.36	0.53
D2	Component Body Diameter	4.33	4.83
F1,F2	Component Lead Pitch	2.40	2.90
F1,F2	F1-F2	-	±0.3
H	Height Of Seating Plane	15.50	16.50
H1	Feed Hole Location	8.50	9.50
H2	Front To Rear Deflection	-	1
H2A	Deflection Left Or Right	-	1
H3	Component Height	-	27
H4	Feed Hole To Bottom Of Component	-	21
L	Lead Length After Component Removal	-	11
L1	Lead Wire Enclosure	2.50	-
P	Feed Hole Pitch	12.50	12.90
P1	Center Of Seating Plane Location	5.95	6.75
P2	4 Feed Hole Pitch	50.30	51.30
T	Over All Tape Thickness	-	0.55
T1	Total Taped Package Thickness	-	1.42
T2	Carrier Tape Thickness	0.36	0.68
W	Tape Width	17.50	19.00
W1	Adhesive Tape Width	5.00	7.00
-	20 pcs Pitch	253	255

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: Pure tin plated.
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0.