N-CHANNEL MOSFET

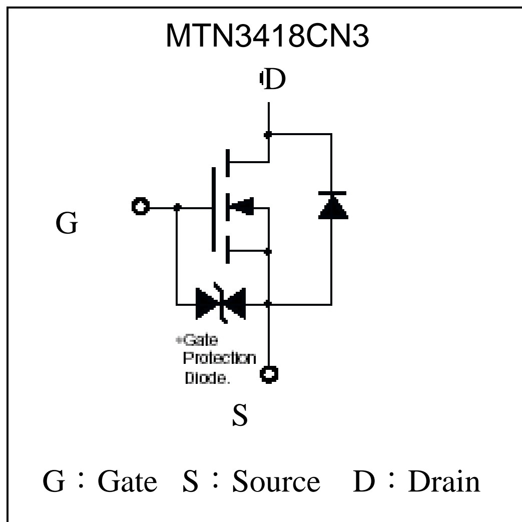
MTN3418CN3

BV_{DSS}	30V
I_D	1.4A
$R_{DSON(max)}$ @V_{GS}=10V	300mΩ
$R_{DSON(max)}$ @V_{GS}=4V	450mΩ

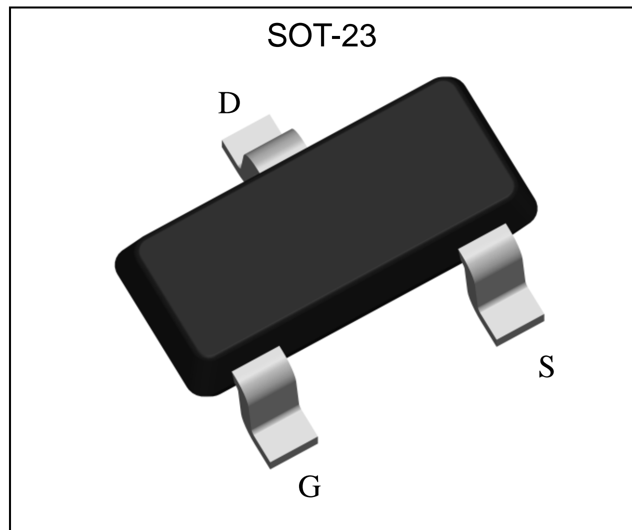
Features

- Low on-resistance
- High ESD
- High speed switching
- Low-voltage drive(2V)
- Easily designed drive circuits
- Easy to use in parallel
- Pb-free package

Symbol

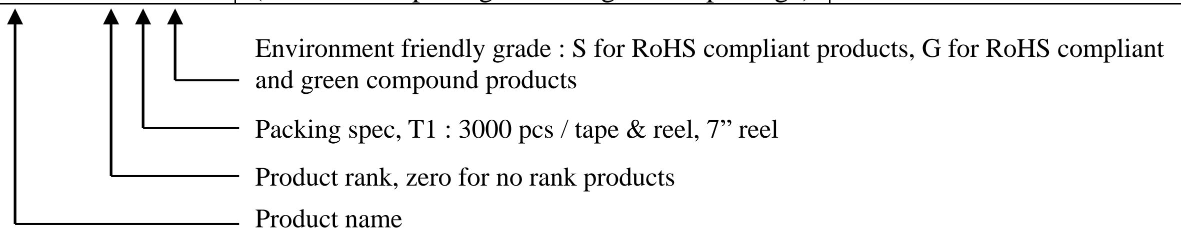


Outline



Ordering Information

Device	Package	Shipping
MTN3418CN3-0-T1-G	SOT-23 (Pb-free lead plating and halogen-free package)	3000 pcs / tape & reel



Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit
Drain-Source Voltage		V_{DSS}	30	V
Gate-Source Voltage		V_{GSS}	±20	
Drain Current	Continuous	I_D	1.4	A
	Pulsed	I_{DP}	5.6 *1	
Total Power Dissipation		P_D	900 *2	mW
ESD susceptibility			700 *3	V
Channel Temperature		T_{CH}	+150	°C
Storage Temperature		Tstg	-55~+150	

Note : *1. Pulse Width ≤ 300μs, Duty cycle ≤2%
*2. When the device is mounted on a ceramic board with area measuring 30mm × 30mm × 0.8mm
*3. Human body model, 1.5kΩ in series with 100pF

Thermal Performance

Parameter	Symbol	Limit	Unit
Thermal Resistance, Junction-to-Ambient(PCB mounted)	Rth,ja	139 (Note)	°C/W
Thermal Resistance, Junction-to-Case	Rth,jc	80	

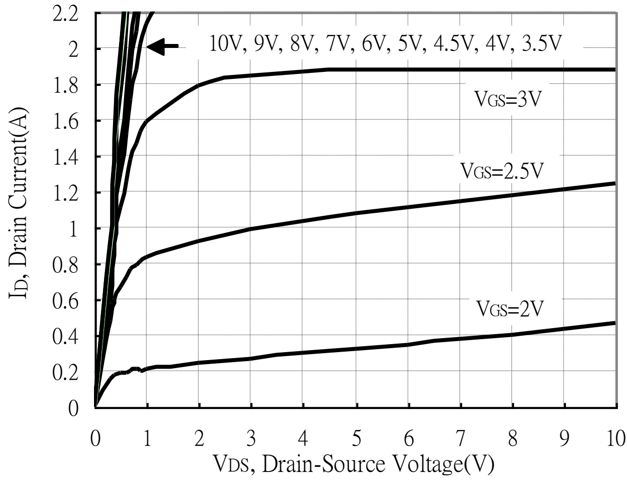
Note : When the device is mounted on a ceramic board with area measuring 30mm × 30mm × 0.8mm.

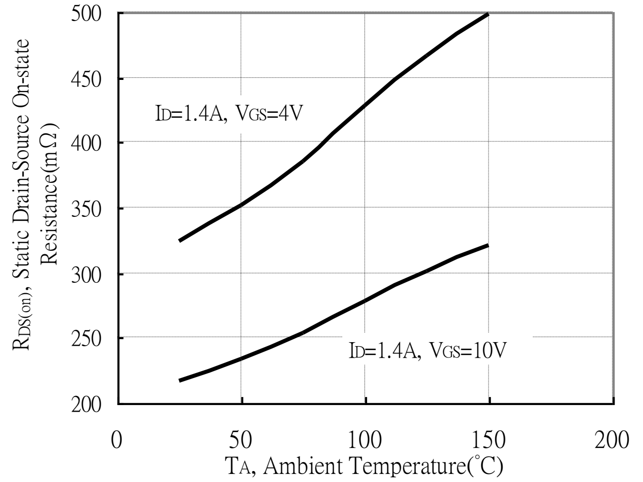
Electrical Characteristics (Ta=25°C)

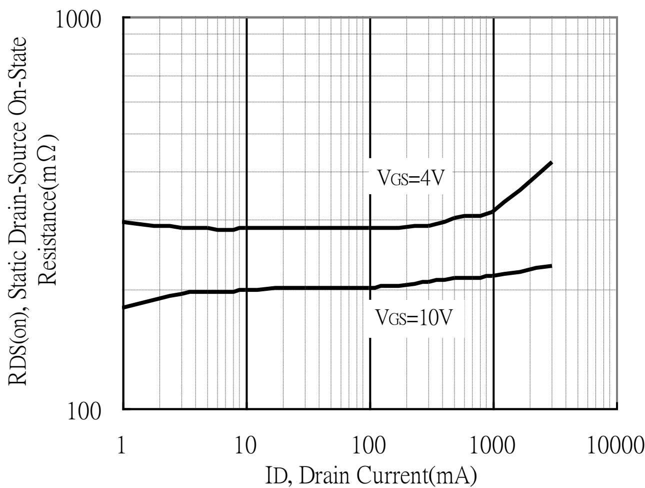
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV_{DSS}*	30	-	-	V	V_{GS}=0V, I_D=10μA
$V_{GS(th)}$	1	-	2.5		V_{DS}=V_{GS}, I_D=250μA
I_{GSS}	-	-	±10	μA	V_{GS}=±20V, V_{DS}=0V
I_{DSS}	-	-	500	nA	V_{DS}=30V, V_{GS}=0V
$R_{DS(ON)}$*	-	220	300	mΩ	I_D=700mA, V_{GS}=10V
	-	220	300		I_D=1.4A, V_{GS}=10V
	-	300	450		I_D=400mA, V_{GS}=4V
	-	325	450		I_D=1.4A, V_{GS}=4V
G_{FS}	400	-	-	mS	V_{DS}=10V, I_D=700mA
Dynamic					
C_{iss}	-	60	-	pF	V_{DS}=10V, V_{GS}=0V, f=1MHz
C_{oss}	-	16	-		
C_{rss}	-	9	-		
Source-Drain Diode					
*V_{SD}	-	-	1.2	V	V_{GS}=0V, I_{SD}=1.4A

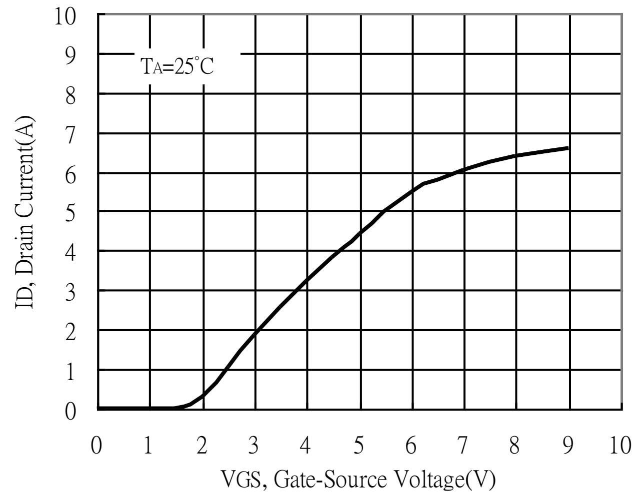
*Pulse Test : Pulse Width ≤380μs, Duty Cycle≤2%

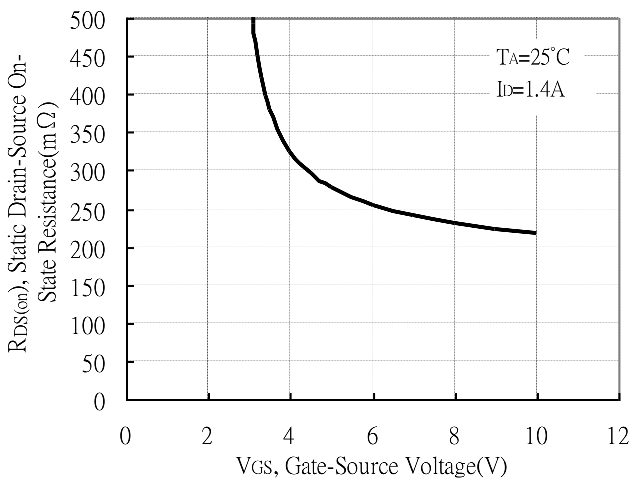
Typical Characteristics

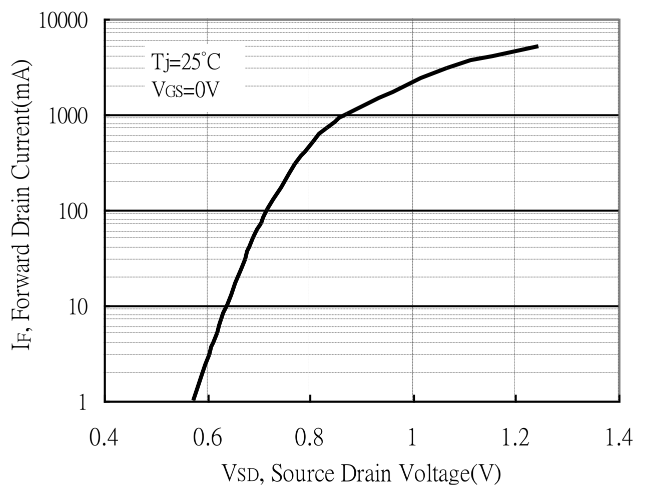




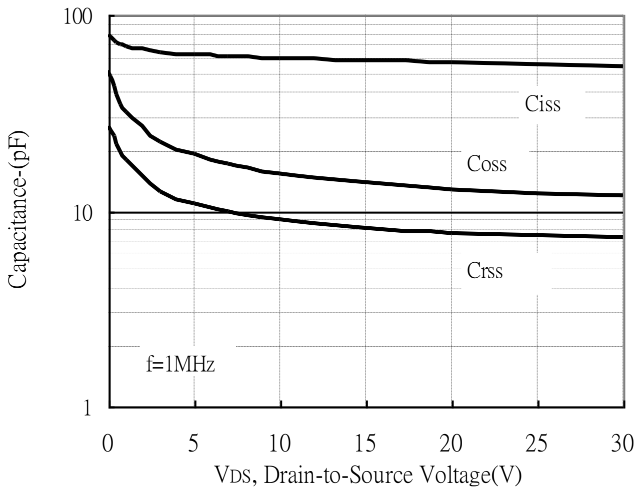


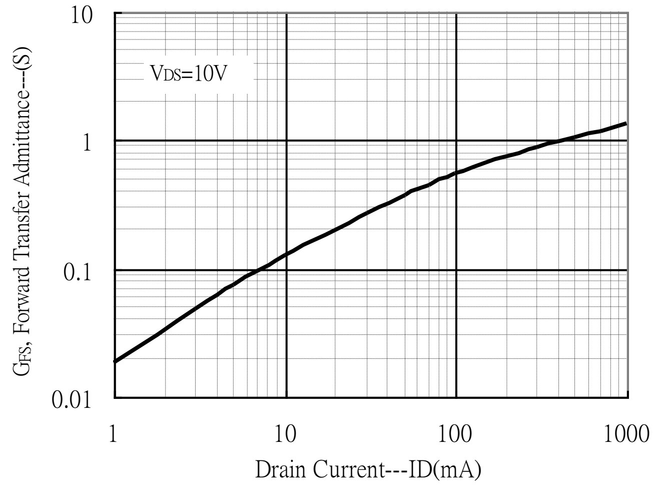


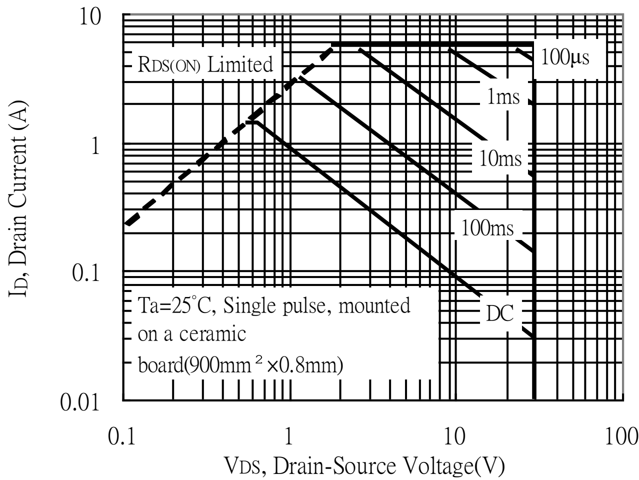


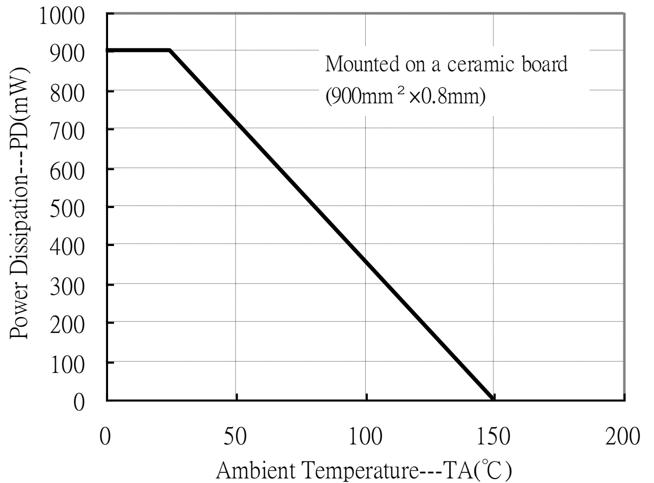


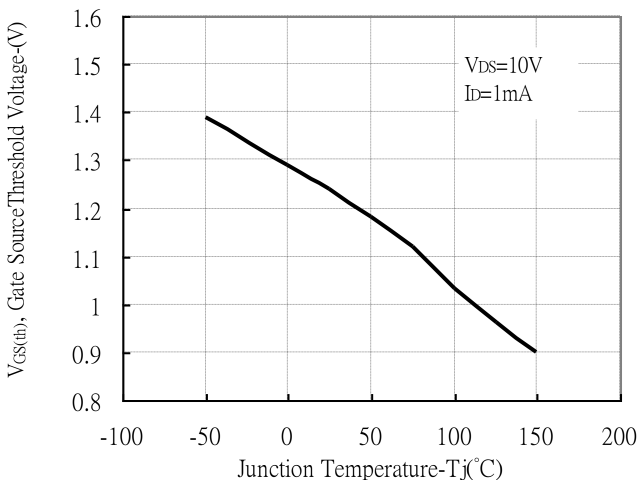
Typical Characteristics(Cont.)

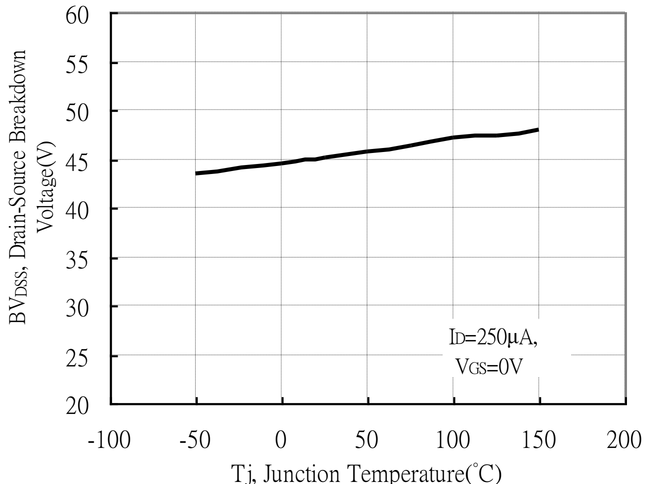




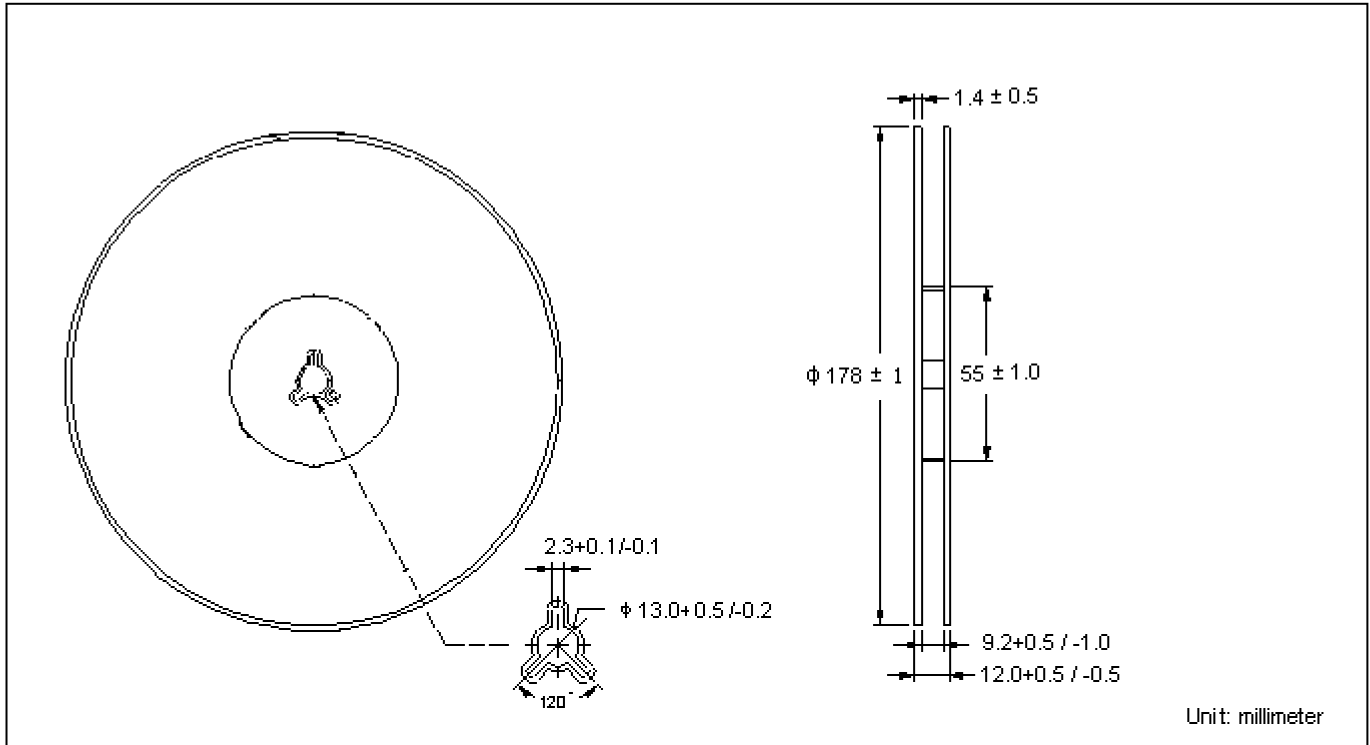




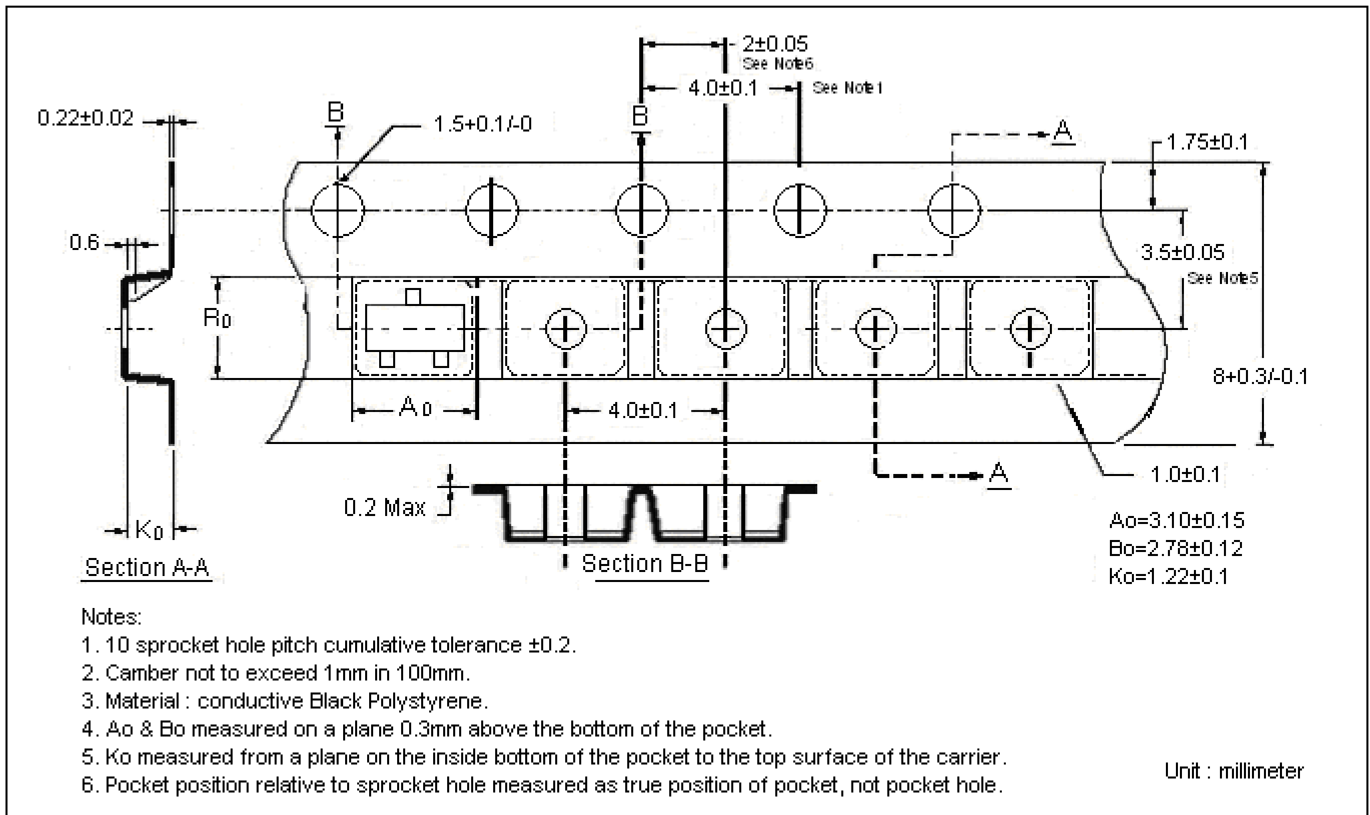




Reel Dimension



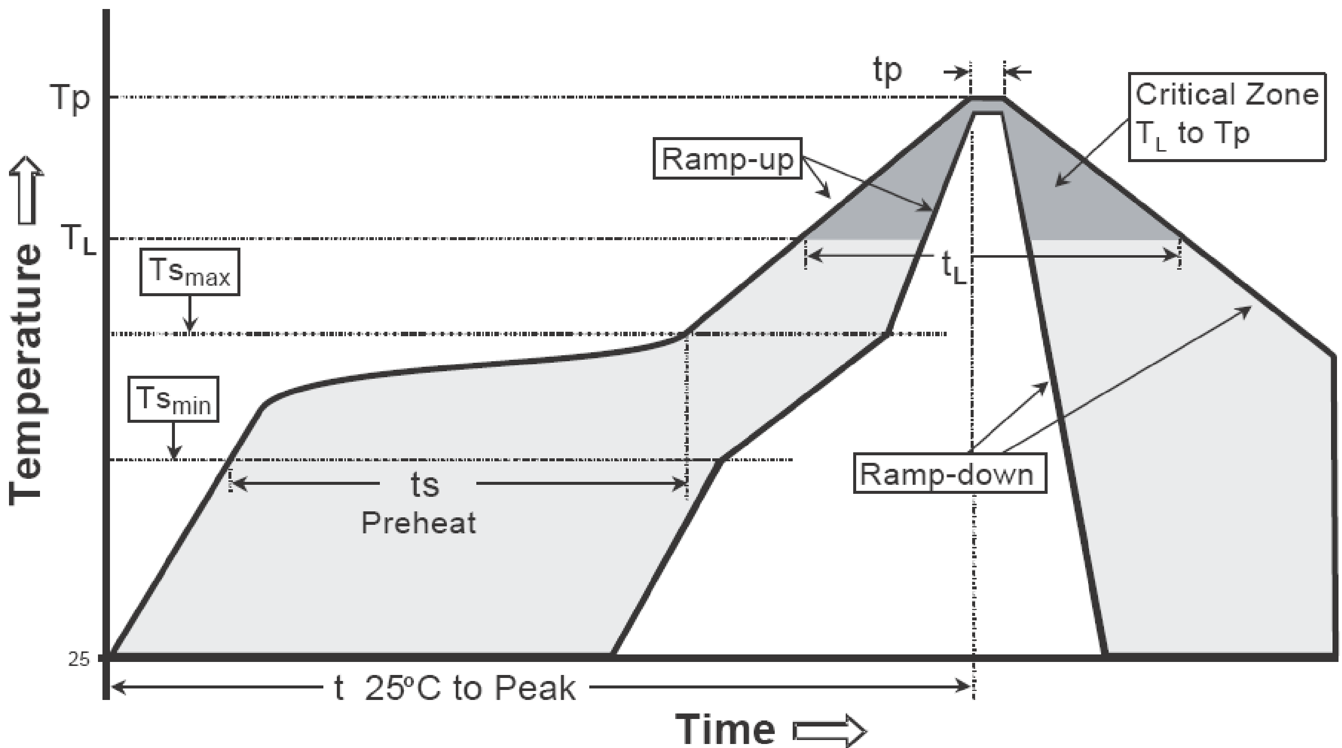
Carrier Tape Dimension



Recommended wave soldering condition

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

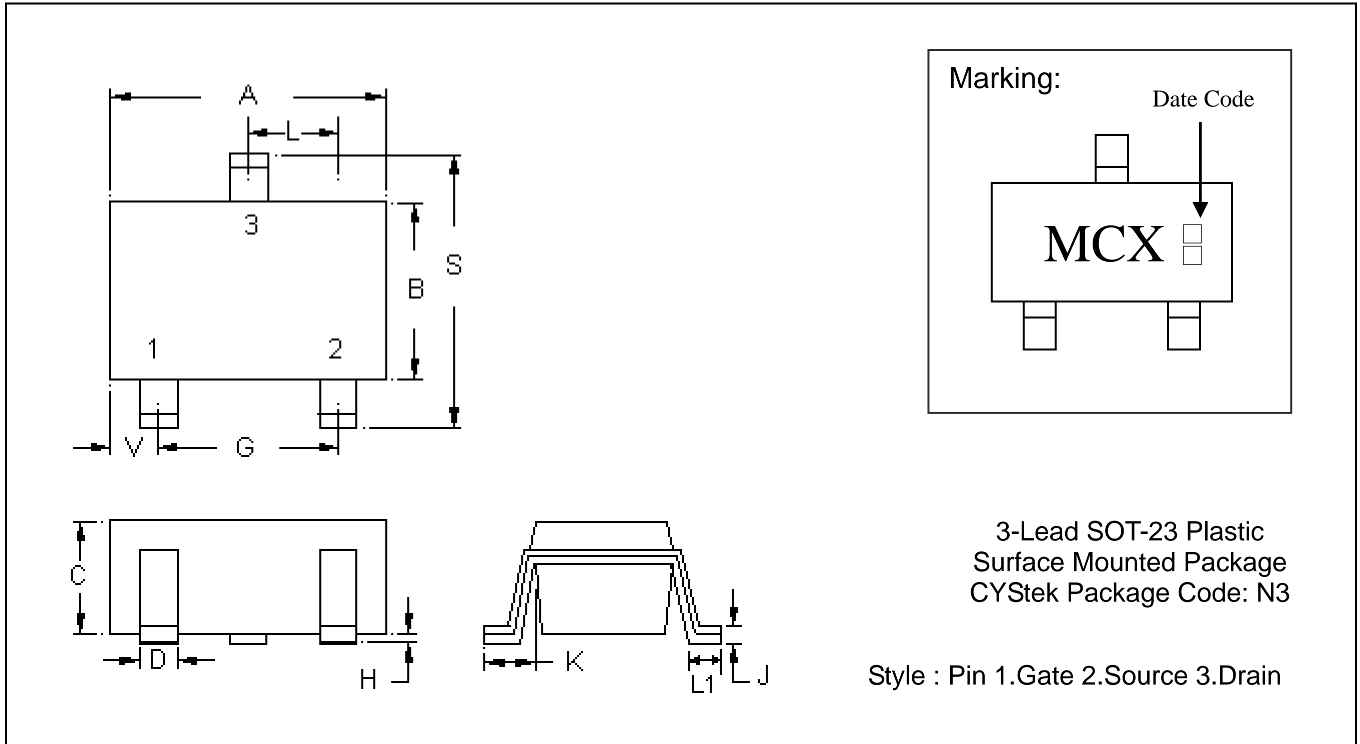
Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmax to Tp)	3°C/second max.	3°C/second max.
Preheat −Temperature Min(T_S min) −Temperature Max(T_S max) −Time($t_{s\ min}$ to $t_{s\ max}$)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: −Temperature (T_L) − Time (t_L)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(T_P)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(tp)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

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	0.0032	0.0079	0.08	0.20
B	0.0472	0.0551	1.20	1.40	K	0.0118	0.0266	0.30	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	0.1004	2.10	2.55
G	0.0669	0.0910	1.70	2.30	V	0.0098	0.0256	0.25	0.65
A	0.1102	0.1204	2.80	3.04	L1	0.0032	0.0079	0.08	0.20

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.

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