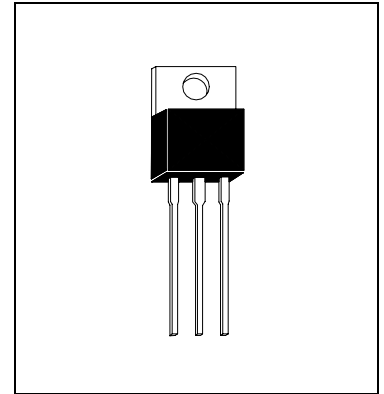




# HSK1118

## Description

- Field Effect Transistor.
- Silicon N Channel MOS Type.
- High Speed, High Current DC-DC Converter, Relay Drive and Motor Drive Applications



## Features

- 4-Volt Gate Drive
- Low Drain-Source On Resistance -  $R_{DS(on)}=0.95\Omega$  (Typ.)
- High Forward Transfer Admittance -  $|Y_{fs}|=4.0S$  (Typ.)
- Low Leakage Current -  $I_{DSS} = 300\mu A$  (Max.) @  $V_{DS} = 600V$
- Enhancement-Mode -  $V_{th} = 1.5\sim 3.5V$  @  $V_{DS} = 10V, I_D = 1mA$

## Absolute Maximum Ratings (Ta=25°C)

- Maximum Temperatures
  - Storage Temperature ..... -55 ~ +150 °C
  - Junction Temperature ..... 150 °C
- Maximum Power Dissipation
  - Total Power Dissipation (Tc=25°C) ..... 45 W
- Maximum Voltages and Currents (Tc=25°C)
  - DRAIN to SOURCE Breakdown Voltage ..... 600 V
  - DRAIN to GATE Breakdown Voltage ..... 600 V
  - GATE to SOURCE Voltage ..... ±30 V
  - DRAIN Current (Cont.)..... 6 A
  - DRAIN Current (Pluse) ..... 24 A

## Thermal Characteristics

Characteristic	Symbol	Max.	Units
Junction to Case	RθJC	2.77	°C/W
Junction to Ambient	RθJA	62.5	°C/W

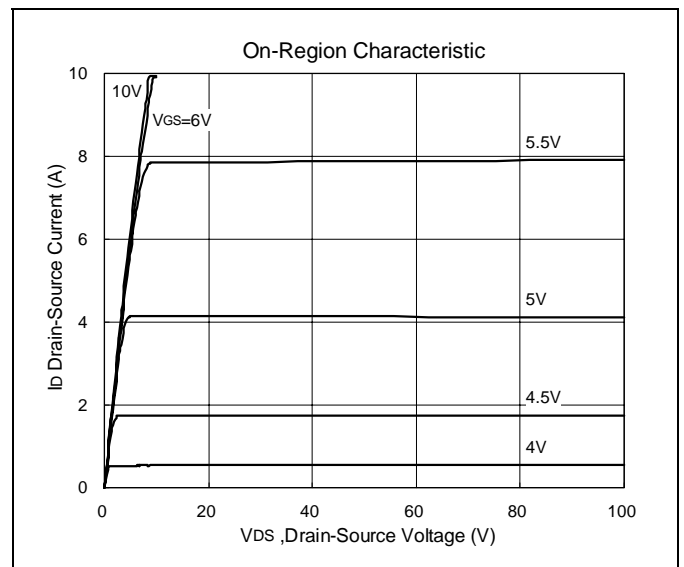
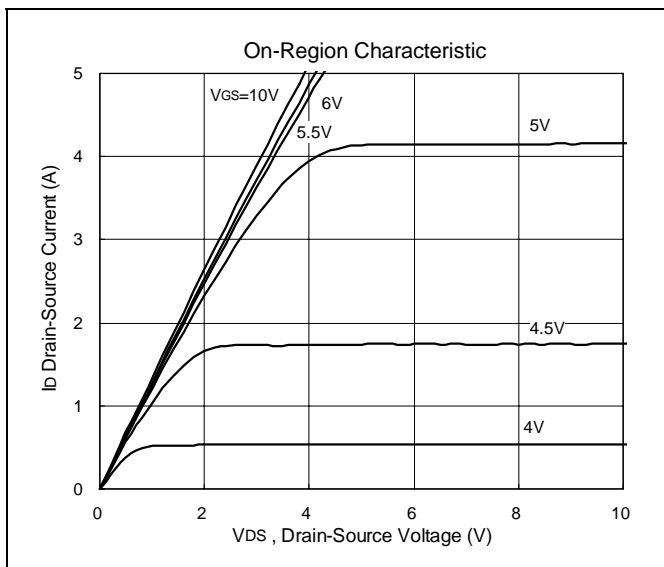
Note : This transistor is an electrostatic sensitive device. Please handle with care.

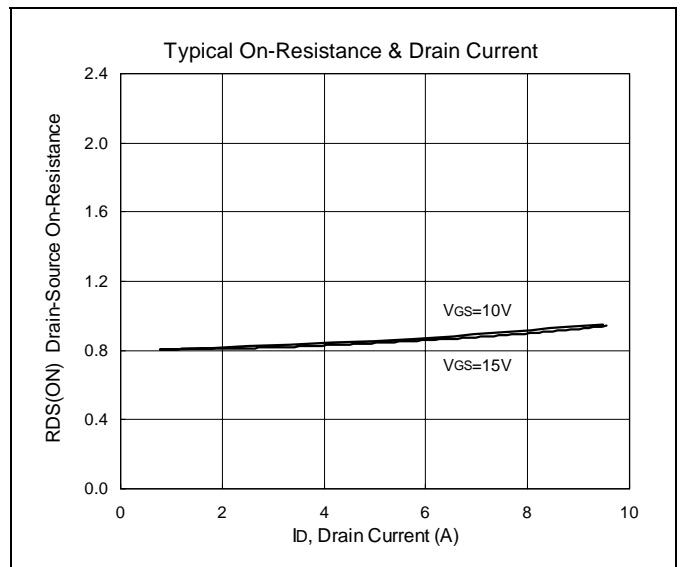
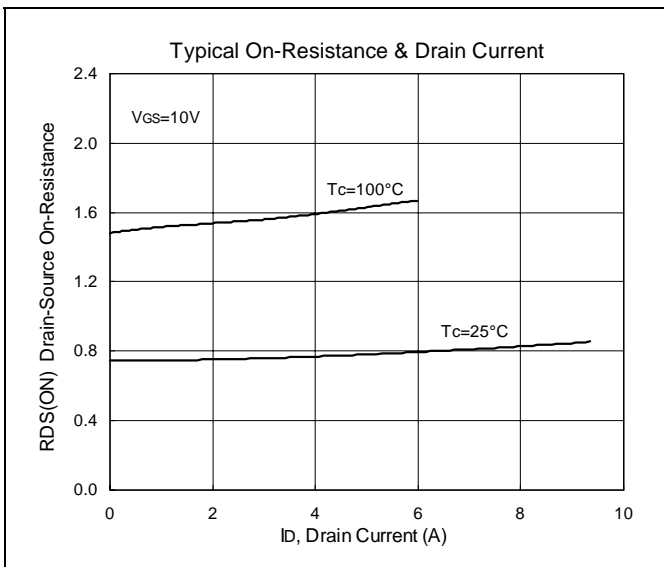
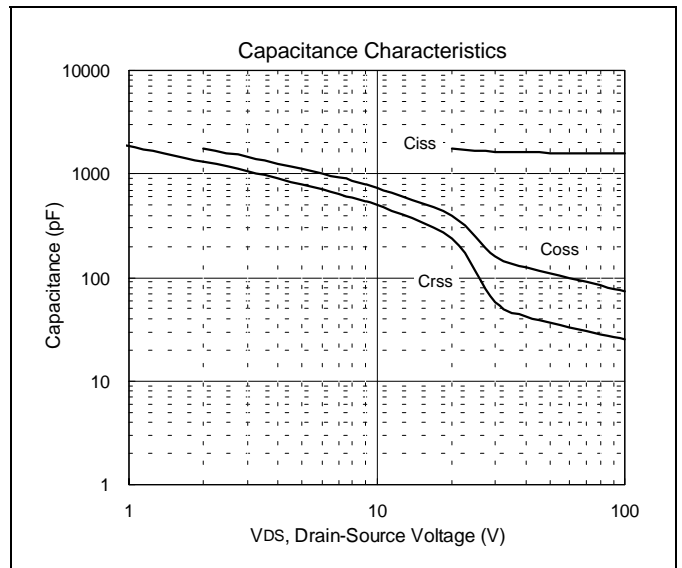
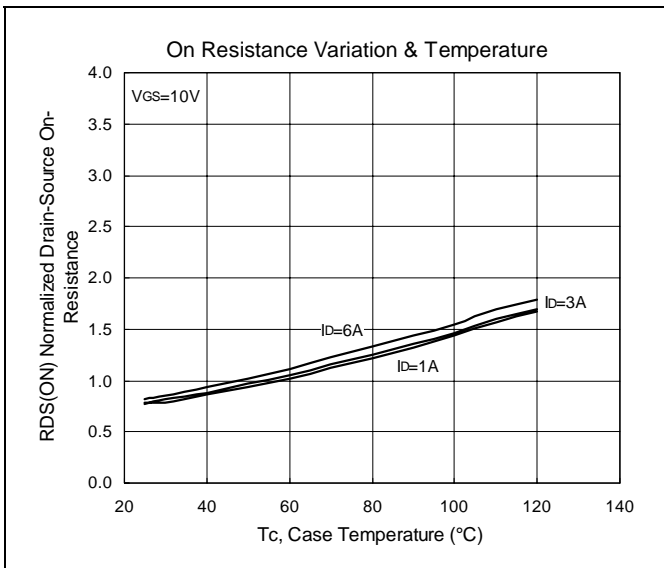
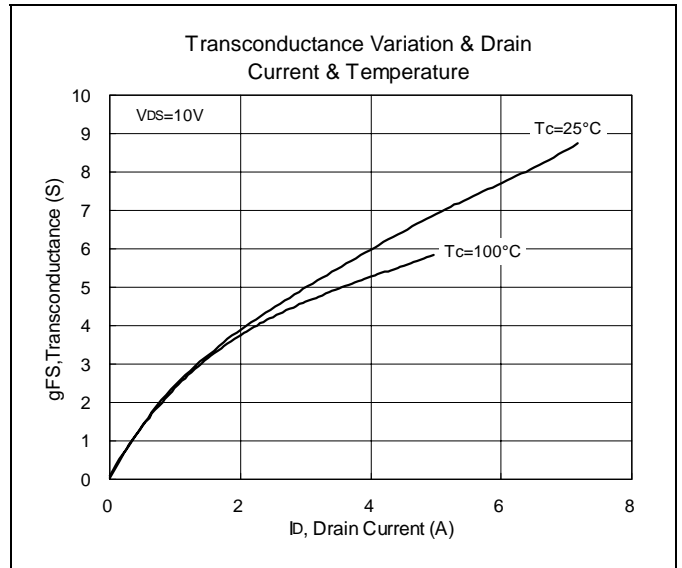
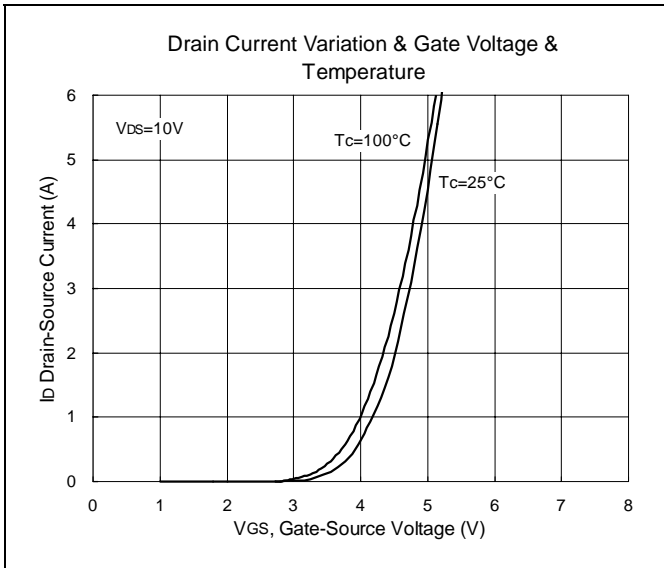


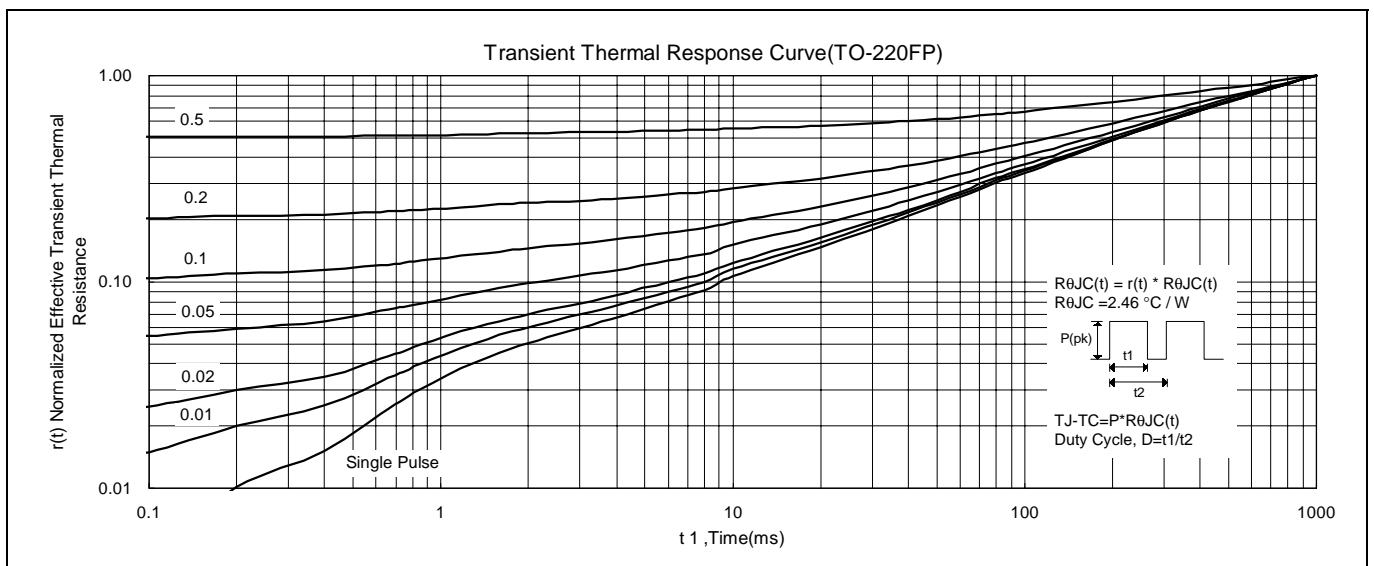
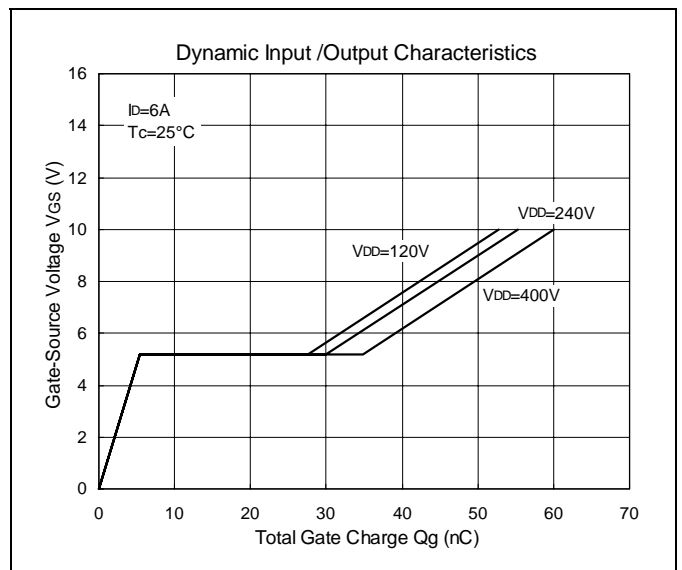
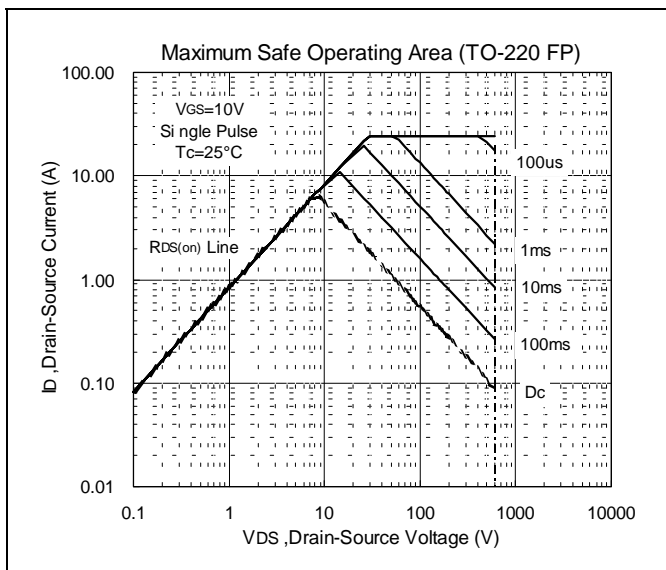
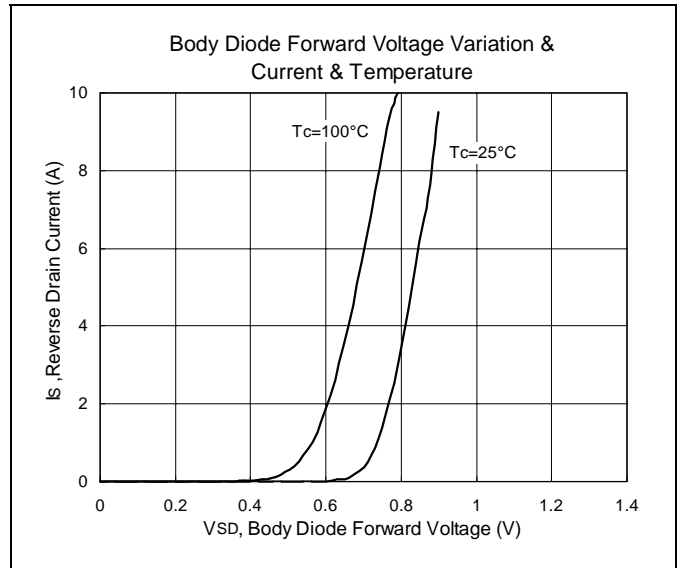
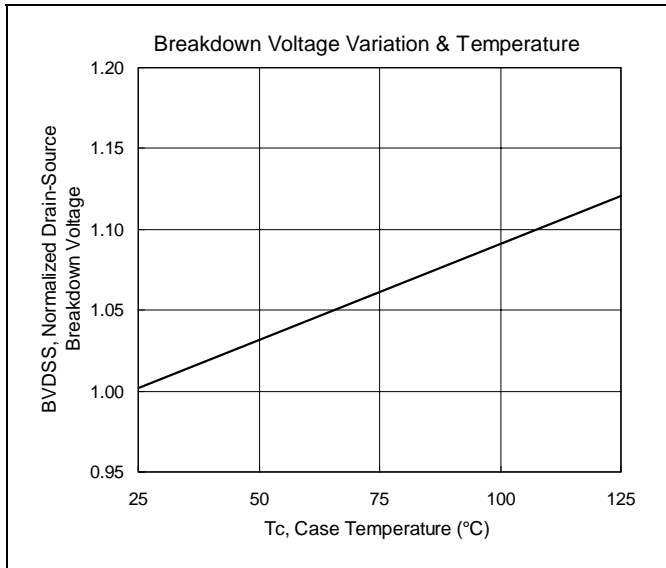
### Characteristics (Ta=25°C)

Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	600	-	-	V	$I_D=250\mu A$
Gate Threshold Voltage	$V_{GS(th)}$	2	-	4	V	$V_{DS}=10V, I_D=1mA$
Drain Cut-Off Current	$I_{DSS}$	-	-	25	$\mu A$	$V_{DS}=600V$
Gate Leakage Current	$I_{GSS}$	-	-	$\pm 100$	nA	$V_{GS}=\pm 25V$
Drain-Source On Voltage	$V_{DS(ON)}$	-	-	6	V	$I_D=5.0A, V_G=10V$
On-State Drain Current	$I_{D(ON)}$	9	-	-	A	$V_{DS}=10V, V_{GS}=10V$
Drain-Source ON Resistance	$R_{DS(ON)}$	-	0.95	1.25	$\Omega$	$V_{GS}=10V, I_D=3A$
Input Capacitance	$C_{iss}$	-	2000	-	pF	$V_{DS}=10V, V_{GS}=0V$ $f=1MHz$
Reverse Transfer Capacitance	$C_{rss}$	-	500	-	pF	
Output Capacitance	$C_{oss}$	-	740	-	pF	
Switching Time	$T_r$	-	50	-	nS	$V_{IN} : T_r, T_f < 5nS$ $V_{DD}=300V, I_D=3A$ $V_{GS}=10V$ Duty $\leq 1\%$ , $t_w=10\mu S$
	$T_{on}$	-	80	-		
	$T_f$	-	40	-		
	$T_{off}$	-	170	-		
Total Gate Charge (Gate-Source Plus Gate-Drain)	$Q_g$	-	60	-	nC	$I_D=6A$ $V_{DS}=400V$ $V_{GS}=10V$
Gate-Source Charge	$Q_{gs}$	-	30	-	nC	
Gate-Drain Charge (Miller)	$Q_{gd}$	-	30	-	nC	

### Characteristics Curve

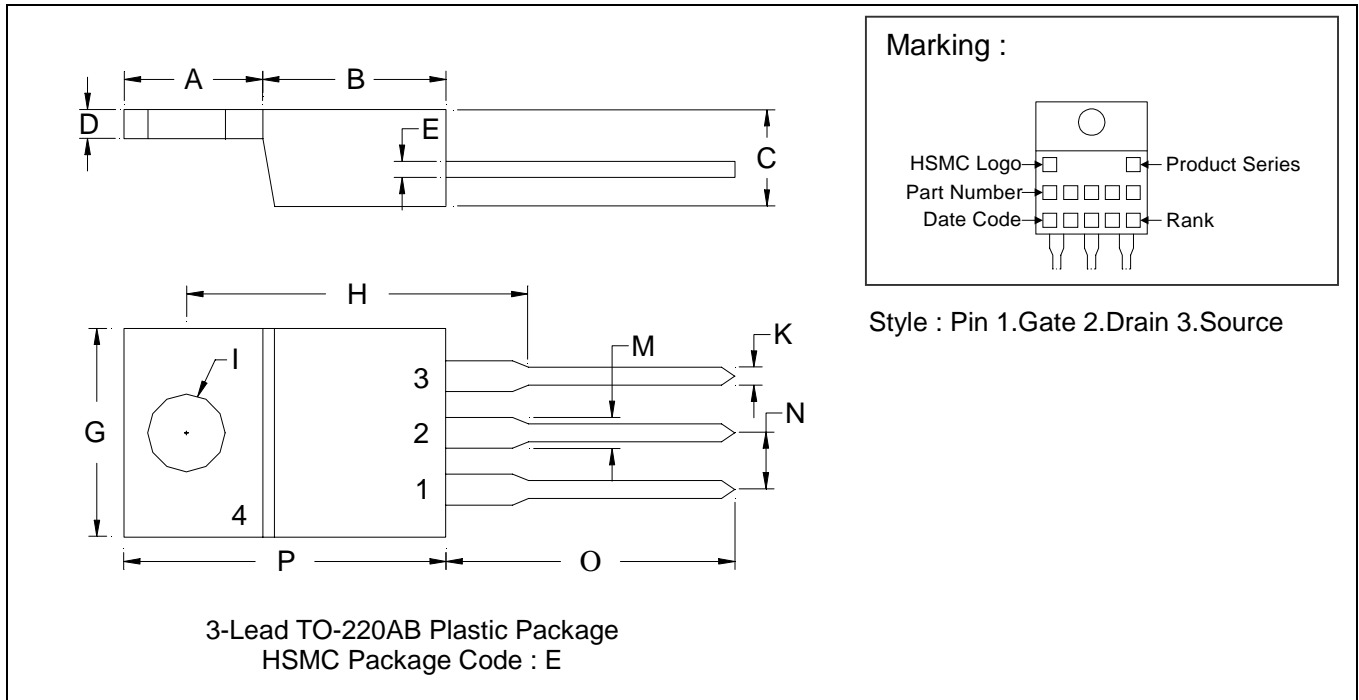








### TO-220AB Dimension



\*:Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.2197	0.2949	5.58	7.49	I	-	*0.1508	-	*3.83
B	0.3299	0.3504	8.38	8.90	K	0.0295	0.0374	0.75	0.95
C	0.1732	0.185	4.40	4.70	M	0.0449	0.0551	1.14	1.40
D	0.0453	0.0547	1.15	1.39	N	-	*0.1000	-	*2.54
E	0.0138	0.0236	0.35	0.60	O	0.5000	0.5618	12.70	14.27
G	0.3803	0.4047	9.66	10.28	P	0.5701	0.6248	14.48	15.87
H	-	*0.6398	-	*16.25					

- Notes :
- 1.Dimension and tolerance based on our Spec. dated Sep. 07,1997.
  - 2.Controlling dimension : millimeters.
  - 3.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
  - 4.If there is any question with packing specification or packing method, please contact your local HSMC sales office.

**Material :**

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

**Important Notice:**

- All rights are reserved. Reproduction in whole or in part is prohibited without the prior written approval of HSMC.
- HSMC reserves the right to make changes to its products without notice.
- **HSMC semiconductor products are not warranted to be suitable for use in Life-Support Applications, or systems.**
- HSMC assumes no liability for any consequence of customer product design, infringement of patents, or application assistance.

**Head Office And Factory :**

- **Head Office** (Hi-Sincerity Microelectronics Corp.) : 10F.,No. 61, Sec. 2, Chung-Shan N. Rd. Taipei Taiwan R.O.C.  
 Tel : 886-2-25212056 Fax : 886-2-25632712, 25368454
- **Factory 1** : No. 38, Kuang Fu S. Rd., Fu-Kou Hsin-Chu Industrial Park Hsin-Chu Taiwan. R.O.C  
 Tel : 886-3-5983621~5 Fax : 886-3-5982931
- **Factory 2** : No. 17-1, Ta-Tung Rd., Fu-Kou Hsin-Chu Industrial Park Hsin-Chu Taiwan. R.O.C  
 Tel : 886-3-5977061 Fax : 886-3-5979220