5.4 Thermal Information

THERMAL METRIC[1]		LMx24, LM2902						LMx24			UNIT
		D (SOIC)	DB (SSOP)	N (PDIP)	NS (SO)	PW (TSSOP)	RTE (WQFN) [5]	FK (LCCC)	J (CDIP)	W (CFP)	
		14 PINS	14 PINS	14 PINS	14 PINS	14 PINS	16 PINS	20 PINS	14 PINS	14 PINS	
$R_{\theta JA}$ [2] [3]	Junction-to-ambient thermal resistance	99.3	106.5	83.5	90.4	124.7	64.9	74.5	84.7	153.4	°C/W
$R_{\theta JC(top)}$ [4]	Junction-to-case (top) thermal resistance	60.4	55.5	62.0	48.0	57.9	68.8	49.9	37.5	72.7	°C/W
$R_{\theta JB}$		57.5	56.8	57.7	49.2	80.7	40.2	49.0	72.2	146.5	
Ψ_{JT}		19.8	18.2	40.5	14.4	8.4	4.9	42.9	31.0	48.3	
Ψ_{JB}		57.0	55.8	57.1	48.8	79.8	40.0	48.9	67.3	129.2	
$R_{\theta JC(bot)}$	Junction-to-case (bottom) thermal resistance	—	—	—	—	—	23.6	7.3	18.8	10.1	°C/W

(1) For more information about traditional and new thermal metrics, see the *Semiconductor and IC Package Thermal Metrics* application note.
(2) Short circuits from outputs to VCC can cause excessive heating and eventual destruction.
(3) Maximum power dissipation is a function of $T_{J(max)}$, $R_{\theta JA}$, and T_A. The maximum allowable power dissipation at any allowable ambient temperature is $P_D = (T_{J(max)} – T_A)/R_{\theta JA}$. Operating at the absolute maximum T_J of 150°C can affect reliability.
(4) Maximum power dissipation is a function of $T_{J(max)}$, $R_{\theta JA}$, and T_C. The maximum allowable power dissipation at any allowable case temperature is $P_D = (T_{J(max)} – T_C)/R_{\theta JC}$. Operating at the absolute maximum T_J of 150°C can affect reliability.
(5) This package is preview only.