

Parameter	Symbol	Conditions SOURCE = 0 V; T _J = 0 to 100 °C (Unless Otherwise Specified)		Min	Typ	Max	Units
Control Functions (cont.)							
FEEDBACK Pin Voltage	V _{FBth}	T _J = 25 °C C _{BP} = 1 μF	LNK6424/6425/ 6426	1.995	2.020	2.045	V
			6436	2.035	2.060	2.085	
			LNK6407, LNK6408, LNK6448	1.915	1.940	1.965	
			LNK6417, LNK6418	1.955	1.980	2.005	
			LNK6427, LNK6428	1.995	2.020	2.045	
FEEDBACK Pin Voltage at Turn-Off Threshold	V _{FB(AR)}			1.14	1.22	1.30	V
Minimum Switch ON-Time	t _{ON(MIN)}	See Note E			700		ns
FEEDBACK Pin Sampling Delay	t _{FB}			2.55	2.75	2.95	μs
DRAIN Supply Current	I _{S1}	FB Voltage > V _{FBth} (MOSFET Not Switching)			300	380	μA
	I _{S2}	Feedback Voltage = V _{FBth} - 0.1 V, Switch ON-Time = t _{ON} (MOSFET Switching at f _{OSC})	LNK64x4		480	540	μA
			LNK64x5		500	560	
			LNK64x6		550	620	
			LNK64x7		600	680	
			LNK64x8		700	780	
BYPASS Pin Charge Current	I _{CH1}	V _{BP} = 0 V	LNK64x4	-5.2	-4.4	-2.7	mA
			LNK64x5	-6.8	-5.8	-3.3	
			LNK64x6	-7.5	-6.1	-3.5	
			LNK64x7	-7.5	-6.1	-3.5	
			LNK64x8	-7.5	-6.1	-3.5	
	I _{CH2}	V _{BP} = 4 V	LNK64x4	-5	-2.8	-1.5	
			LNK64x5	-6.4	-4.0	-1.8	
			LNK64x6	-7	-4.2	-2	
			LNK64x7	-7	-4.2	-2.0	
			LNK64x8	-7	-4.2	-2.0	
BYPASS Pin Voltage	V _{BP}			5.65	5.90	6.25	V
BYPASS Pin Voltage Hysteresis	V _{BPH}			0.70	0.95	1.20	V
BYPASS Pin Shunt Voltage	V _{SHUNT}			6.2	6.4	6.8	V

Parameter	Symbol	Conditions SOURCE = 0 V; T _J = 0 to 100 °C (Unless Otherwise Specified)		Min	Typ	Max	Units
Circuit Protection							
Current Limit	I _{LIMIT}	di/dt = 60 mA/μs V _{BP} = 5.9 V T _J = 25 °C	LNK64x4	232	250	268	mA
		di/dt = 75 mA/μs V _{BP} = 5.9 V T _J = 25 °C	LNK64x5	290	315	340	
		di/dt = 95 mA/μs V _{BP} = 5.9 V T _J = 25 °C	LNK64x6	359	390	421	
		di/dt = 105 mA/μs V _{BP} = 5.9 V T _J = 25 °C	LNK64x7	390	420	449	
		di/dt = 120 mA/μs V _{BP} = 5.9 V T _J = 25 °C	LNK64x8	446	480	513	
Minimum Current Limit Scale Factor	I _{LIMIT(MIN)}			0.27	0.32	0.38	
Normalized Output Current	I _O	T _J = 25 °C		0.975	1.000	1.025	
Leading Edge Blanking Time	t _{LED}	T _J = 25 °C Set Note D		125	170		ns
Thermal Shutdown Temperature	t _{SD}			135	142	150	°C
Thermal Shutdown Hysteresis	t _{SDH}				60		°C
Output							
ON-State Resistance	R _{DS(ON)}	LNK64x4 I _D = 96 mA	T _J = 25 °C		19.7	23.7	Ω
			T _J = 100 °C		30.0	36.0	
		LNK64x5 I _D = 105 mA	T _J = 25 °C		13.2	15.8	
			T _J = 100 °C		19.8	23.8	
		LNK64x6 I _D = 105 mA	T _J = 25 °C		7.7	9.3	
			T _J = 100 °C		11.5	13.8	
		LNK64x7 I _D = 96 mA	T _J = 25 °C		4.8	5.8	
			T _J = 100 °C		7.2	8.5	
LNK64x8 I _D = 105 mA	T _J = 25 °C		3.1	3.8			
	T _J = 100 °C		4.6	5.5			
OFF-State Leakage	I _{DSS1}	V _{DS} = 560 V T _J = 125 °C See Note C				50	μA
	I _{DSS2}	V _{DS} = 375 V T _J = 50 °C			15		

Parameter	Symbol	Conditions SOURCE = 0 V; $T_J = 0$ to $100\text{ }^{\circ}\text{C}$ (Unless Otherwise Specified)	Min	Typ	Max	Units
Output (cont.)						
Breakdown Voltage	BV_{DSS}	$T_J = 25\text{ }^{\circ}\text{C}$	725			V
DRAIN Supply Voltage			50			V
Auto-Restart ON-Time	t_{AR-ON}	See Notes A, E		300		ms
Auto-Restart OFF-Time	t_{AR-OFF}			1.5		s
Open-Loop FEEDBACK Pin Current Threshold	I_{OL}	See Note E		-90		μA
Open-Loop ON-Time		See Note E		90		μs

NOTES:

- A. Auto-restart ON-time is a function of switching frequency programmed by $t_{ON} \times I_{FB}$ and minimum frequency in CC mode.
- B. The current limit threshold is compensated to cancel the effect of current limit delay. As a result the output current stays constant across the input line range.
- C. I_{DSS1} is the worst-case OFF-state leakage specification at 80% of BV_{DSS} and maximum operating junction temperature. I_{DSS2} is a typical specification under worst-case application conditions (rectified 265 VAC) for no-load consumption calculations.
- D. When the duty cycle exceeds DC_{MAX} the LinkSwitch-3 operates in on-time extension mode.
- E. This parameter is derived from characterization.
- F. The switching frequency is programmable between 60 kHz to 85 kHz.

Typical Performance Characteristics

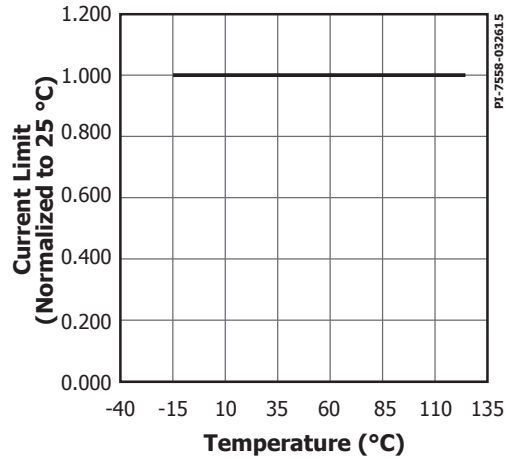


Figure 8. Current Limit vs. Temperature.

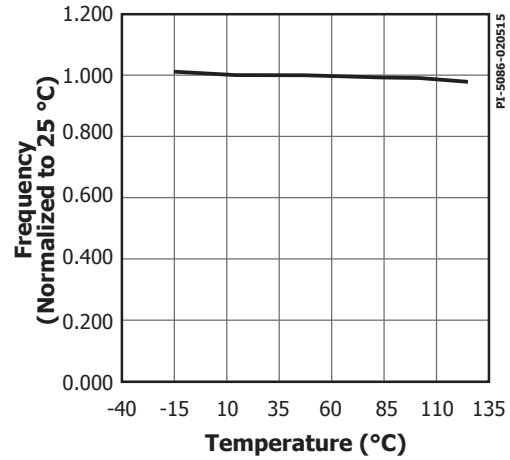


Figure 9. Output Frequency vs. Temperature.

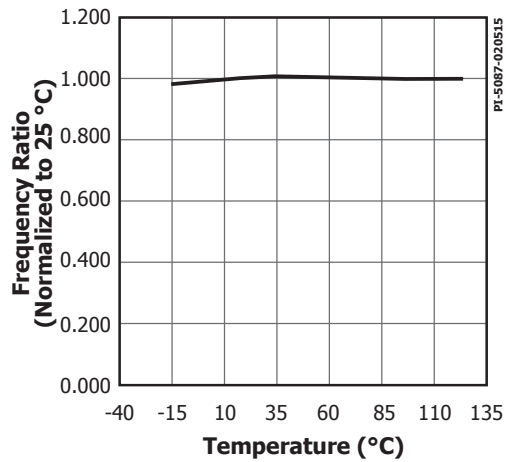


Figure 10. Frequency Ratio vs. Temperature (Constant Current).

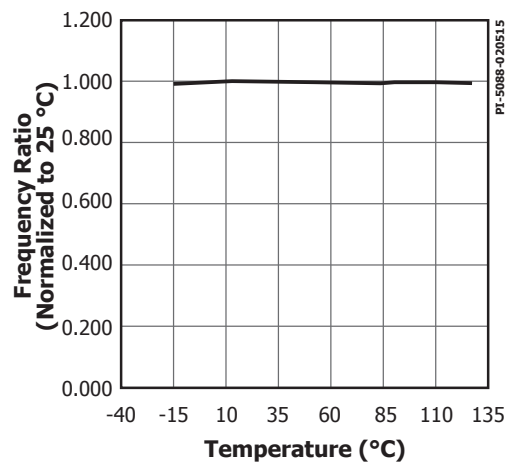


Figure 11. Frequency Ratio vs. Temperature (Inductor Current).

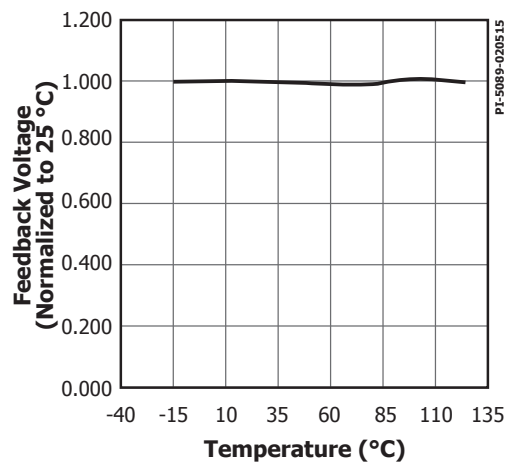


Figure 12. Feedback Voltage vs. Temperature.

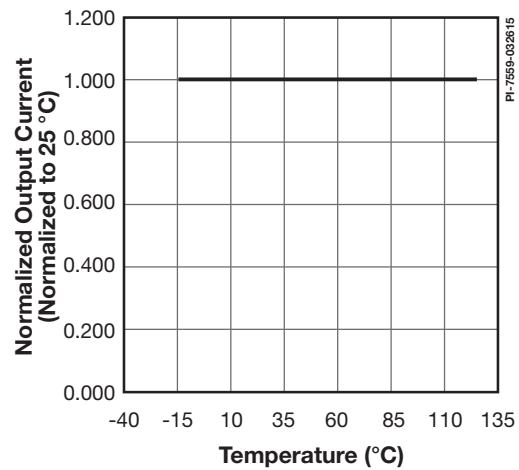


Figure 13. Normalized Output Current vs. Temperature.

Typical Performance Characteristics (cont.)

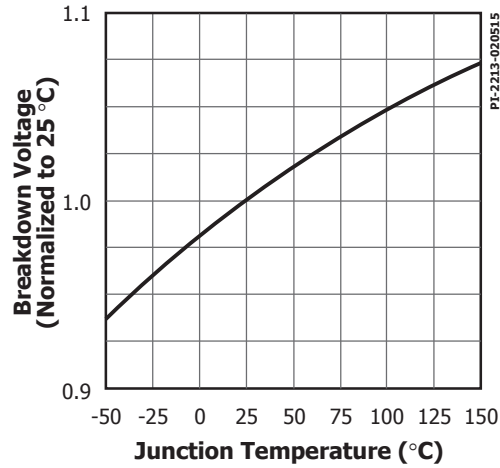


Figure 14. Breakdown vs. Temperature.

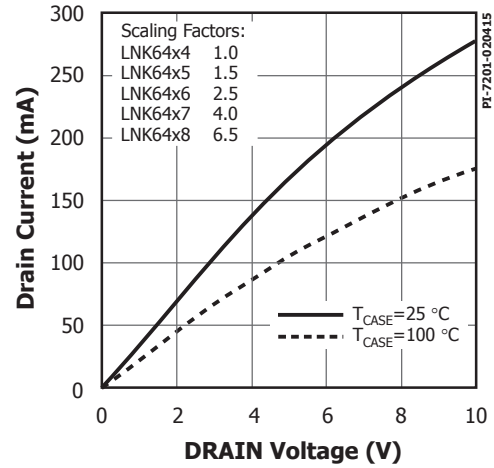


Figure 15. Output Characteristic.

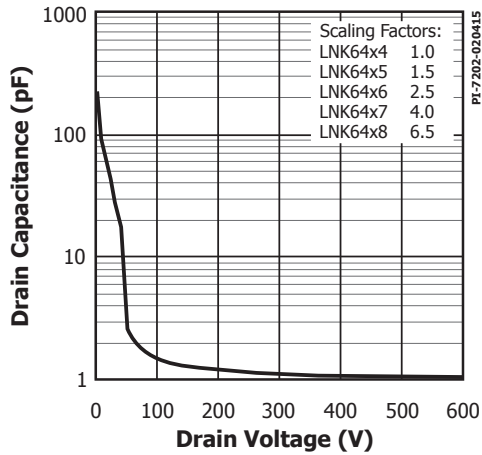


Figure 16. C_{oss} vs. Drain Voltage.

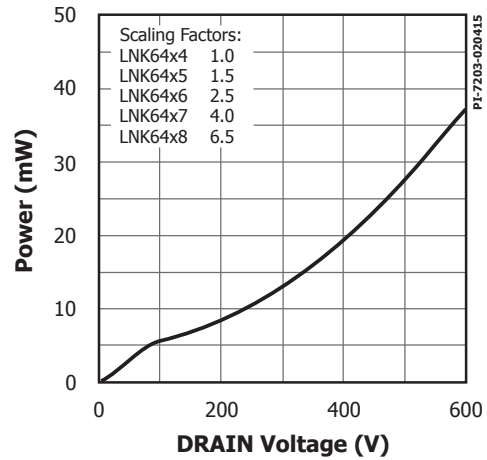
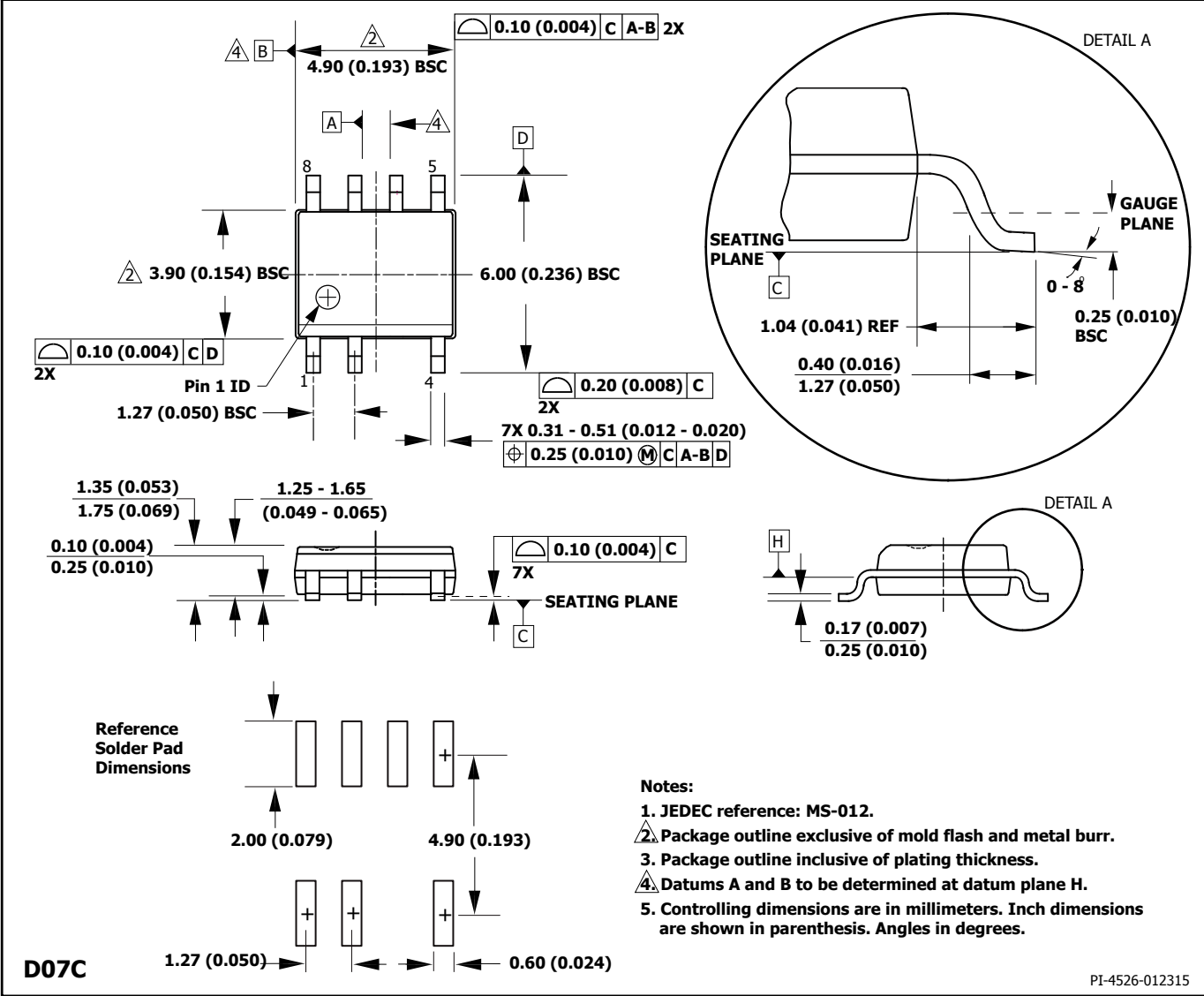
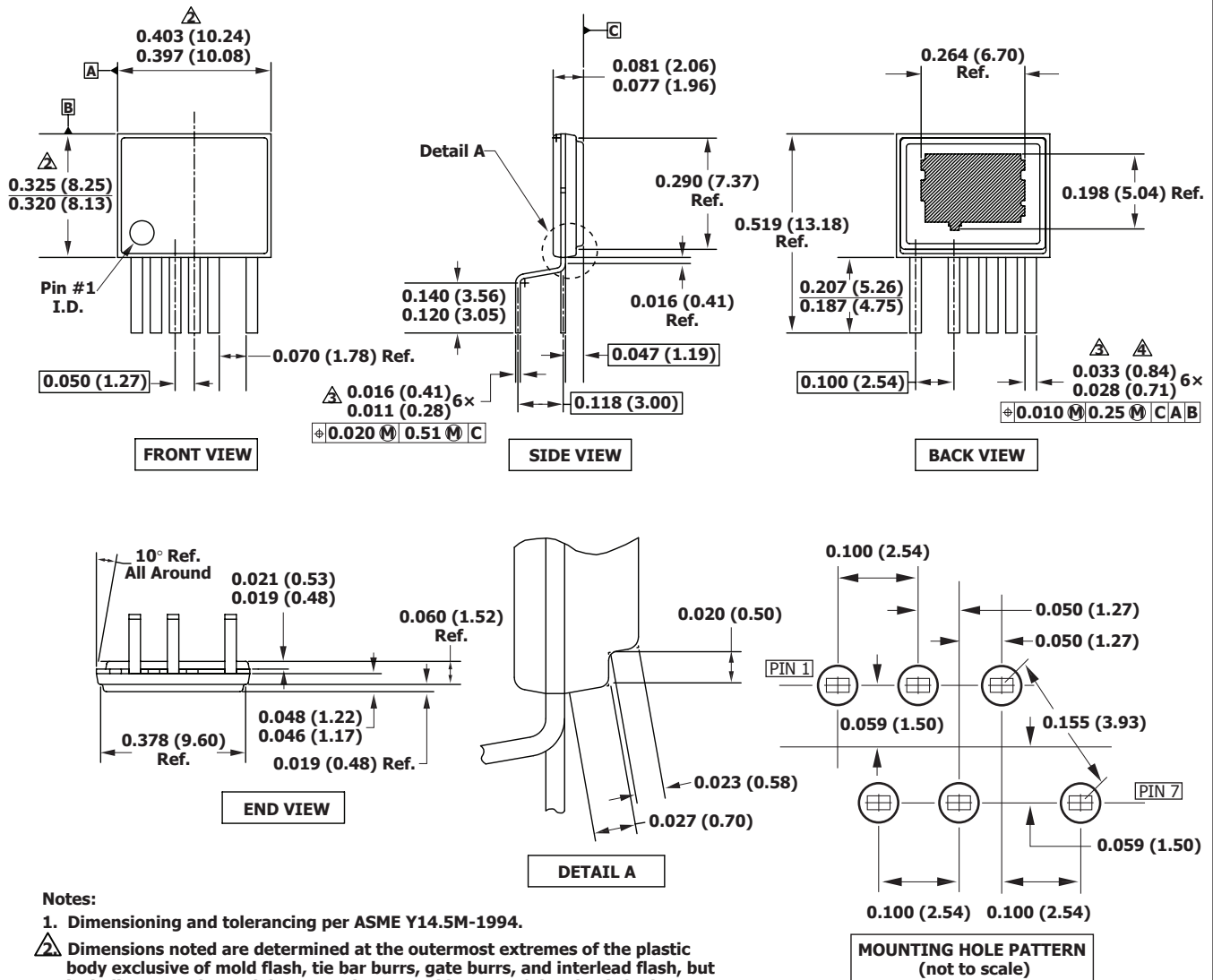


Figure 17. Drain Capacitance Power.

SO-8C (D Package)



eSIP-7C (E Package)

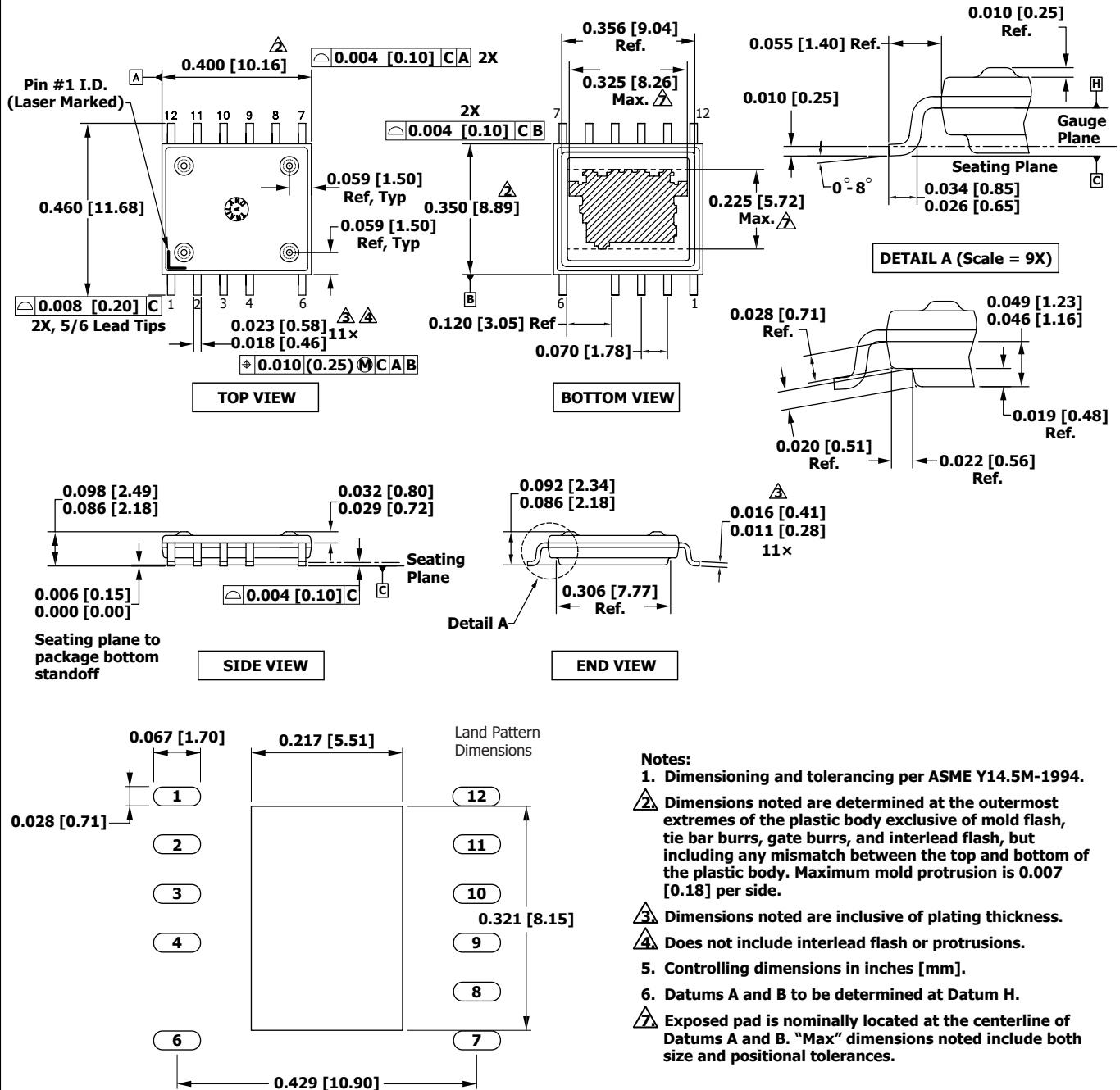


Notes:

1. Dimensioning and tolerancing per ASME Y14.5M-1994.
2. Dimensions noted are determined at the outermost extremes of the plastic body exclusive of mold flash, tie bar burrs, gate burrs, and interlead flash, but including any mismatch between the top and bottom of the plastic body. Maximum mold protrusion is 0.007 [0.18] per side.
3. Dimensions noted are inclusive of plating thickness.
4. Does not include inter-lead flash or protrusions.
5. Controlling dimensions in inches (mm).

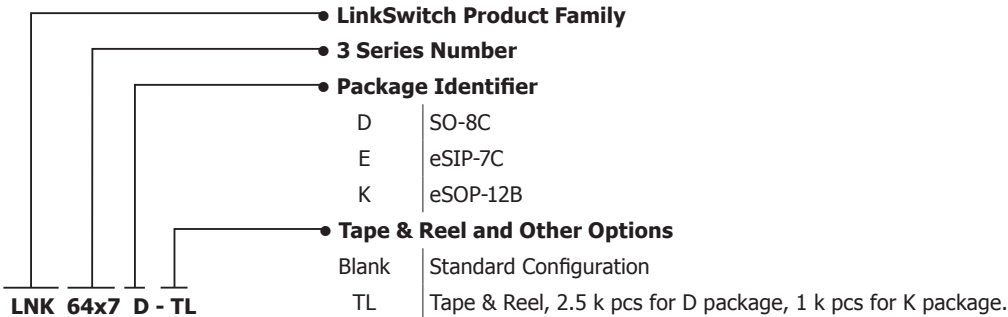
PI-4917-020515

eSOP-12B (K Package)



PI-5748a-020515

Part Ordering Information



Revision	Notes	Date
A	Code A.	10/16/13
A	Specified Max BYPASS Pin Current.	03/13/14
A	Code L. Updated Table 1 and Table 2.	06/11/14
B	Added LNK64x4, 64x5 and 64x6 parts. Updated $f_{\text{RATIO(CC)}}$, $I_{\text{LIMIT(MIN)}}$, t_{FB} , $V_{\text{FB(AR)}}$, $f_{\text{OSC(MIN)}}$, $t_{\text{AR-OFF}}$ and I_{OL} . Updated ms values in Auto-Restart section on page 3. Removed $f_{\text{OSC(AR)}}$ and updated $t_{\text{AR-ON}}$.	03/31/15

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