6.3 ESD Ratings, IEC Specification (continued)

			VALUE	UNIT
Transient	ISO 7637-3 Slow Transients Pulse (4)	Direct coupling capacitor "slow transient pulse" with 100 nF coupling capacitor - powered	±30	V

(1) IEC 62228-2 ESD testing performed at third party. Different system-level configurations may lead to different results.
(2) ISO 7637-2 according to IEC 62228-2 are system-level transient tests. Different system-level configurations may lead to different results.
(3) SAE J2962-1 Testing performed at 3rd party US3 approved EMC test facility.
(4) ISO 7637-3 is a system-level transient test. Different system-level configurations may lead to different results.

6.4 Recommended Operating Conditions

parameters valid over –40°C ≤ T_J ≤ 150 °C range (unless otherwise noted)

		MIN	NOM	MAX	UNIT
V_{SUP}	Supply voltage	5.5		28	V
V_{BAT}	Supply voltage	5.5		28	V
V_{LIN}	LIN bus input voltage	0		28	V
V_{LOGIC5}	Logic pin voltage	0		5.25	V
$V_{LOGIC33}$	Logic pin voltage	0		3.465	V
$I_{OH(DO)}$	Digital terminal HIGH level output current	-2			mA
$I_{OL(DO)}$	Digital terminal LOW level output current			2	mA
$I_{O(LIMP)}$	LIMP output current when configured as LIMP			1	mA
$I_{O(HSS)}$	High side switch output current; LIMP output current when configured as high side switch			100	mA
$I_{O(INH)}$	Inhibit output current			6	mA
$C_{(VSUP)}$	V_{SUP} supply capacitance	100			nF
$C_{(VCC)}$	V_{CC} supply capacitance; no load to full load	10			µF
ESR_{CO}	Output ESR capacitance requirements	0.001		2	Ω
Δt/ΔV	Input transition rise and fall rate (WDI, WDT, WDR)			100	ns/V
T_J	Operating junction temperature range	–40		150	°C

6.5 Thermal Information

THERMAL METRIC(1)		TLIN1431x RGY 20 PINS	UNIT
$R_{\theta JA}$	Junction-to-ambient thermal resistance	37.8	°C/W
$R_{\theta JC(top)}$	Junction-to-case (top) thermal resistance	32.4	°C/W
$R_{\theta JB}$	Junction-to-board thermal resistance	15.7	°C/W
ψ_{JT}	Junction-to-top characterization parameter	0.6	°C/W
ψ_{JB}	Junction-to-board characterization parameter	15.7	°C/W
$R_{\theta JC(bot)}$	Junction-to-case (bottom) thermal resistance	4.3	°C/W

(1) For more information about traditional and new thermal metrics, see the *Semiconductor and IC Package Thermal Metrics* application report.

6.6 Power Supply Characteristics

parameters valid over –40°C ≤ T_J ≤ 150 °C range (unless otherwise noted)

PARAMETER		TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage and Current						
V_{BAT}	V_{BAT} sense pin voltage	470 Ω series resistor with 100nF cap to ground	5.5		28	V