

/ Descriptions

BRCL4058PZZ-4.2				
BRCL4058PZZ-4.2	/			
BRCL4058PZZ-4.2			USB	
BRCL4058PZZ-4.2	PMOSFET			
	4.2V	PROG	1.0A	
	BRCL4058PZZ-4.2			2 A
BRCL4058PZZ-4.2				
BRCL4058PZZ-4.2	DFN	6		PCB
BRCL4058PZZ-4.2	-40 C to +85 C			

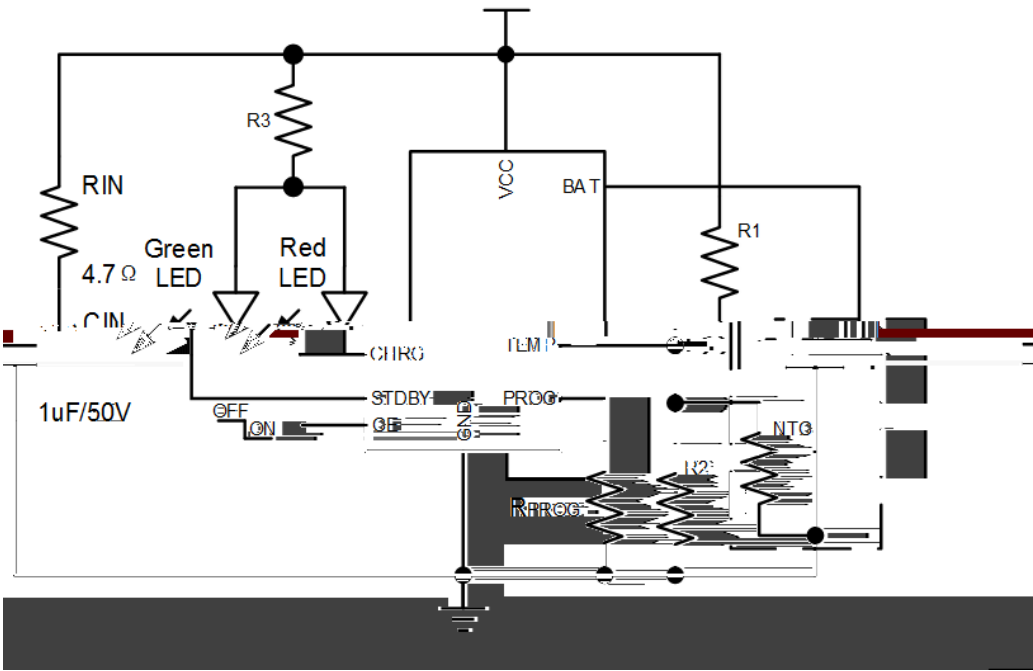
/ Features

- ◆ 36V 6.1V
- ◆ 1% 4.2V
- ◆
- ◆ BAT-VDD
- ◆ <2 A
- ◆ 55 A
- ◆ 0V
- ◆ 1.0A
- ◆ / /
- ◆
- ◆
- ◆
- ◆
- ◆
- ◆
- ◆ RoHS

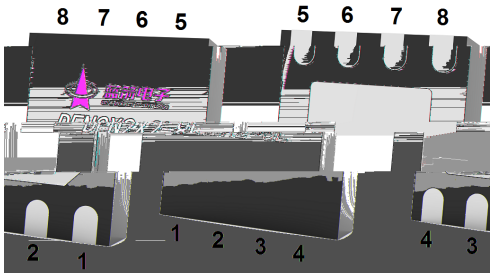
/ Applications

- ◆
- ◆
- ◆
- ◆
- ◆

/ Application Circuit



/ Pinning



PIN Num.	Symbol	Function
1	TEMP	
2		
3	GND	
4	VCC	
5	BAT	
6	STDBY	
7	CHRG	
8	CE	

/ Absolute Maximum Ratings($T_a=25^\circ\text{C}$)

PARAMETER	SYMBOL	RATINGS	UNITS
VCC Pin Voltage	V_{VCC}	-0.3~36.0	V
BAT Pin Voltage	V_{BAT}	-4.2~18.0	
CHRG/STDBY Pin Voltage	$V_{CHRG/STDBY}$	-0.3~13.0	
PROG Pin Voltage	V_{PROG}	-0.3~5.5	
Other Pin Voltage	$V_{TEMP/GND/CE}$	-0.3~5.5	
Operating Ambient Temperature Range	T_{OP}	-40~+85	$^\circ\text{C}$
Storage Temperature	T_{stg}	-65~+150	$^\circ\text{C}$
Lead Temperature (Soldering, 10s)	T_{solder}	260	$^\circ\text{C}$
ESD	HBM	4000	V
	CDM	1000	V

/ Electrical Characteristics($V_{CC}=5V, V_{BAT}=3.6V, T_a=25^\circ\text{C}$)

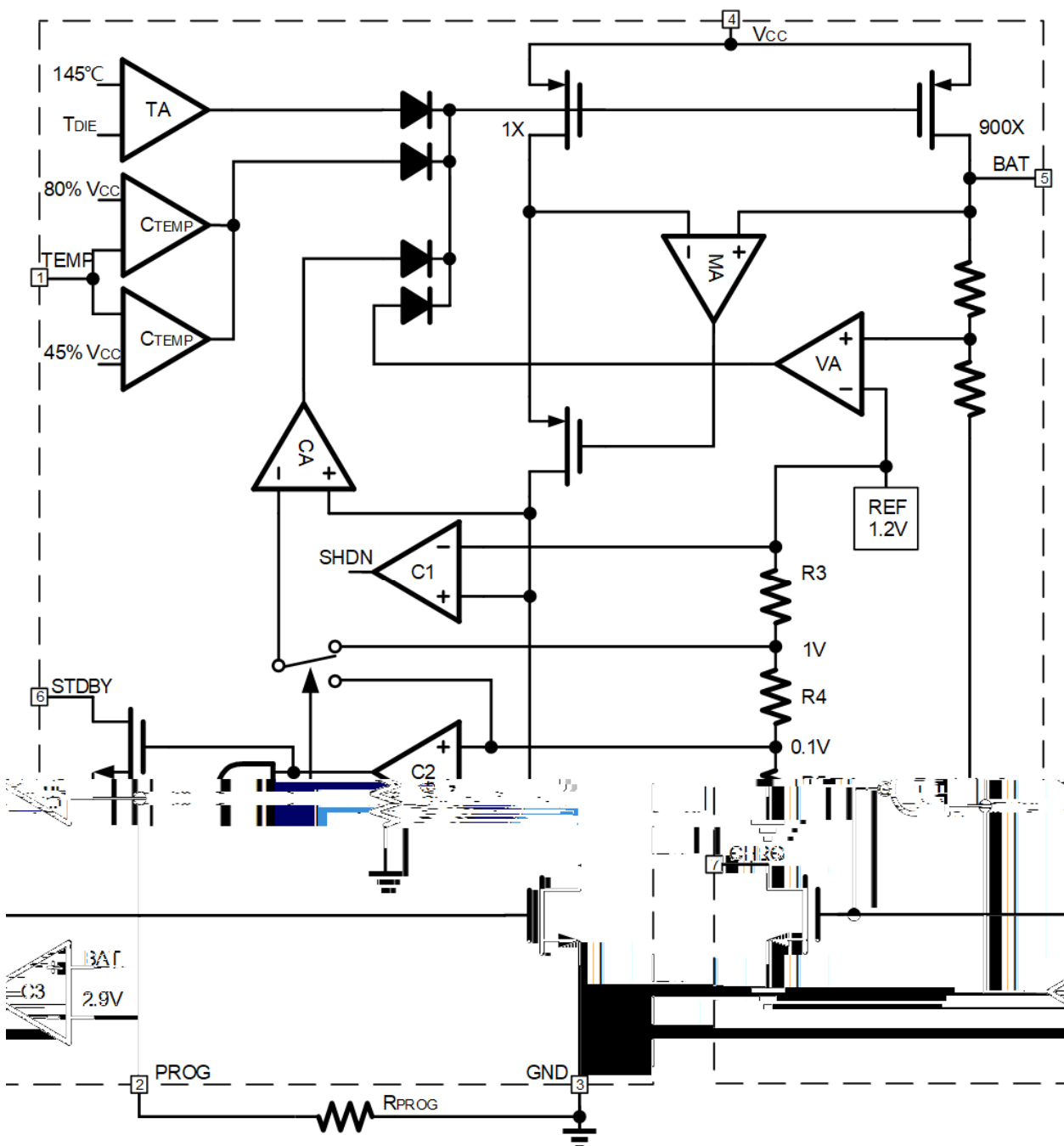
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Input Supply Voltage	V_{CC}		4.5	5.0	36.0	V
Input Power Supply Current	I_{CC}	Charging mode ($R_{PROG}=1.02k$)		260	360	A
		Standby mode, charging terminated		180	300	A
		Shutdown mode (R_{PROG} not connected, $V_{CC}<V_{BAT}$, or V_{CC} V_{UV})		180	300	A
		OVP mode($V_{CC}=30V$)		180	300	A
Regulated Output (Float) Voltage	V_{FLOAT}	$0 \leq T_a \leq 85^\circ\text{C}$, $R_{PROG}=1.02k$	4.158	4.2	4.242	V
BAT Pin Current	I_{BAT}	$R_{PROG}=1.02k$ Current mode	900	1000	1100	mA
		Standby mode, $V_{BAT}=4.2V$	0	-2.5	-6	A
		Shutdown mode (R_{PROG} not connected)		± 1	± 2	A
		Sleep mode, $V_{CC}=0V$		-1	-2	A
Trickle Charge Current	I_{TRIKL}	$V_{BAT} \geq V_{TRIKL}$, $R_{PROG}=1.02k$	65	100	135	mA
Trickle Charge Threshold	V_{TRIKL}	$R_{PROG}=1.02k$, V_{BAT} from Low to High	2.3	2.5	2.7	V
Trickle Charge Hysteresis	V_{TR_HYS}	$R_{PROG}=1.02k$	120	160	200	mV
V_{CC} Under Voltage Lockout Threshold	V_{CC_UV}	V_{CC} from Low to High	3.5	3.7	3.9	V

BRCL4058PZZ-4.2

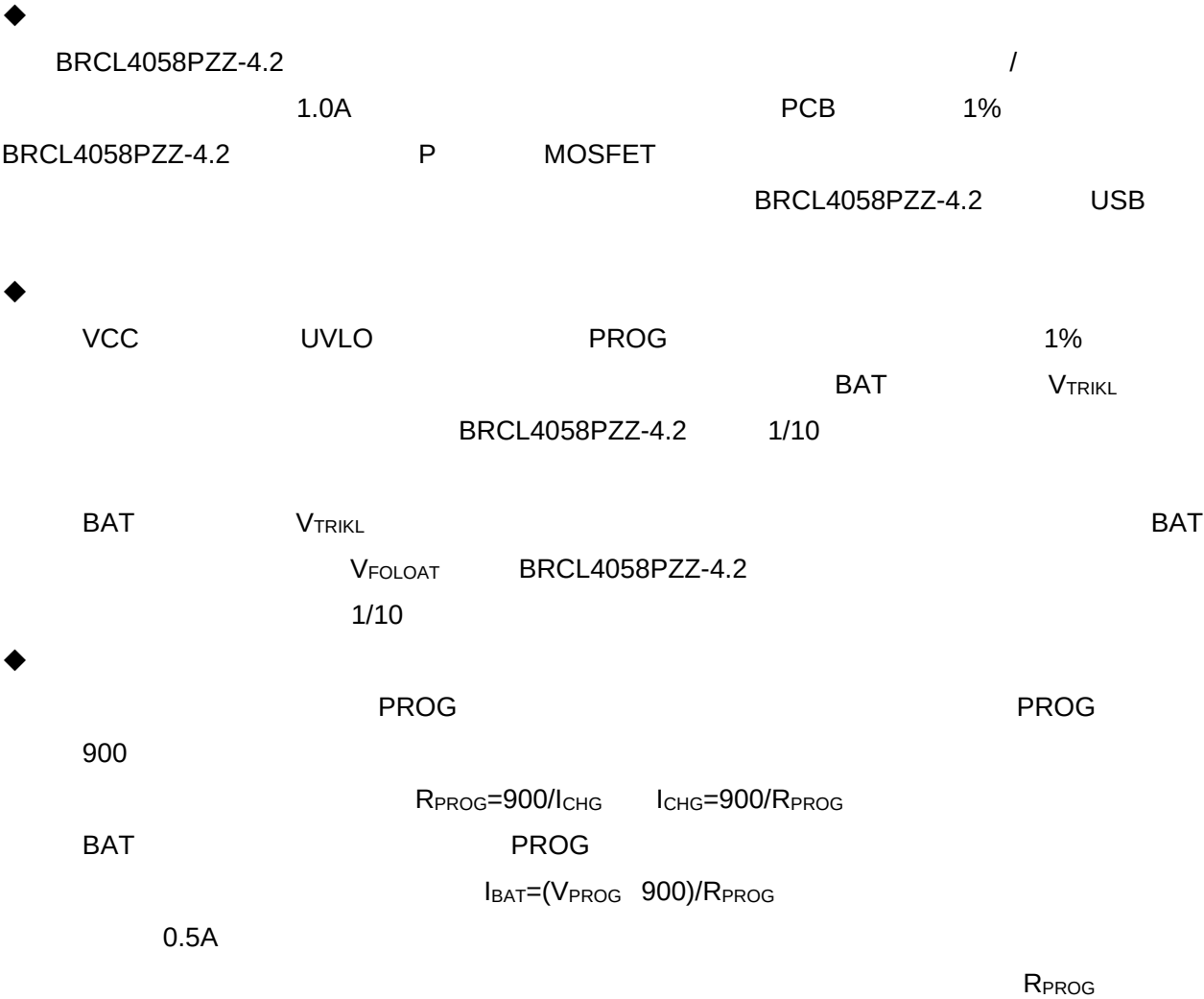
Rev.B May.-2025

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
V _{CC} Under voltage Lockout Hysteresis	V _{CC_UV_HYS}		100	200	300	mV
V _{CC} -V _{BAT} Lockout Threshold	V _{ASD}	V _{CC} from Low to High	100	125	150	mV
		V _{CC} from High to Low	30	65	100	mV
C/10 Charging Termination Current	I _{TERM}	R _{PROG} =1.02k	90	100	110	mA
R _{PROG} voltage at Constant Current Mode	V _{PROG}	R _{PROG} =1.02k, Current mode	0.9	1.0	1.1	V
CHRG outputs low voltage	V _{CHRG}	I _{CHRG} =5mA		0.3	0.6	V
STDBY outputs low voltage	V _{STDBY}	I _{STDBYG} =5mA		0.3	0.6	V
Rechargeable Battery Voltage	V _{RECHRG}	V _{FLOAT} -V _{RECHARH}	100	150	200	mV
Junction temperature in limited temperature mode	T _{LIM}			145		
Static Drain-Source On-Resistance	R _{DS(on)}			500		m
Soft start time	t _{ss}	I _{BAT} = 0 to I _{BAT} = 900V/R				

/ Principle block diagram

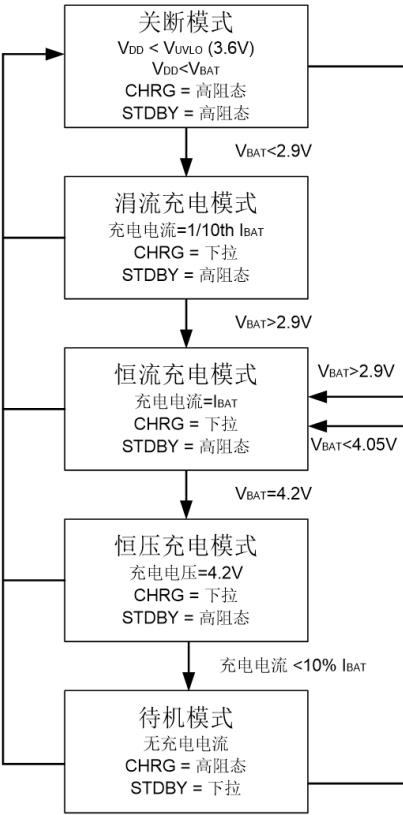
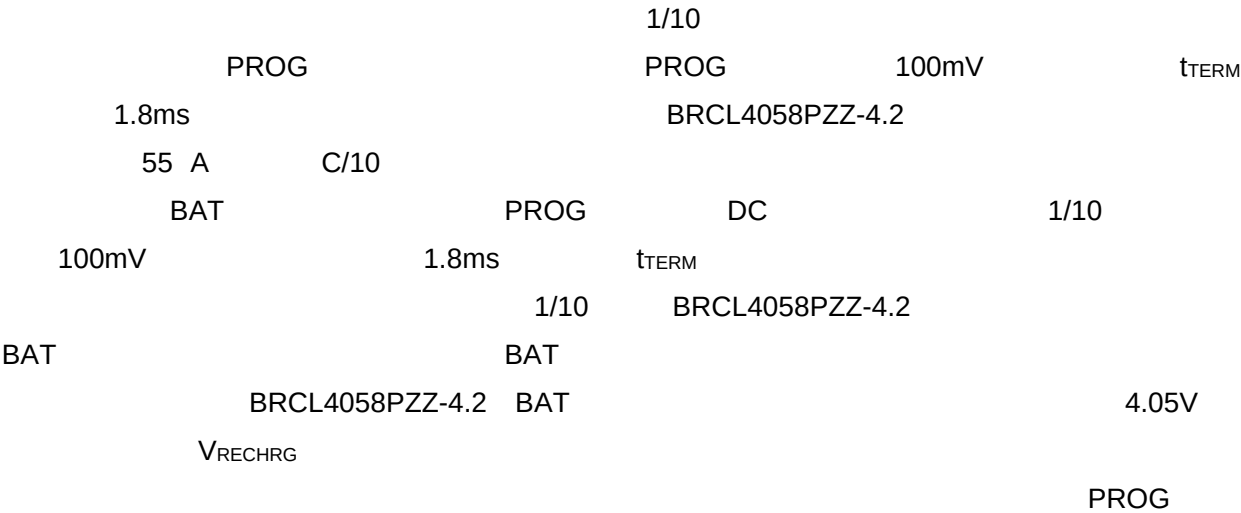


/ Function description



R _{PROG}	
R _{PROG} (K)	I _{CHG} (mA)

/ Function description



BRCL4058PZZ-4.2

Rev.B May.-2025



蓝箭电子
BLUE ROCKET ELECTRONICS

DATA SHEET

/ Function description

BAT

80% 90%

CHRG

◆

ESR

1

PROG

PROG

100kHz

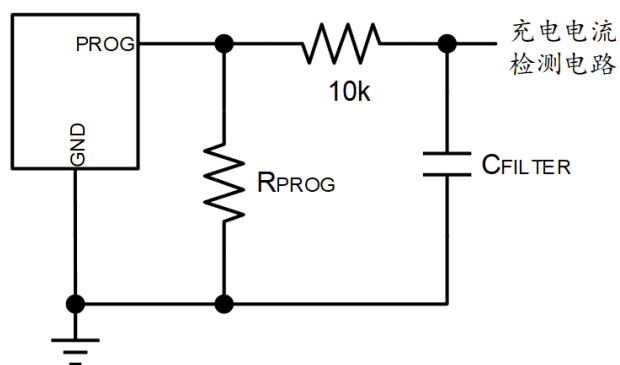
RPROG

$$R_{\text{PROG}} \leq \frac{1}{2\pi \cdot 10^5 \cdot C_{\text{PROG}}}$$

PROG

PROG

10k



◆

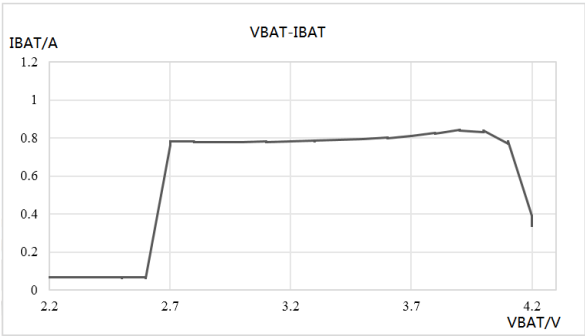
PD

$$T_J = P_D \quad J_A + T_A$$

/ Function description



IC	PD	$V_{IN}-V_{BAT}$	I_{CHG}	:
		$P_D=V_{IN}-V_{BAT} \times I_{CHG}$		
	3.6V			
	4.0V		5%~10%	PD



/ Package Dimensions

DFN2×2-8L-0.75

Unit:mm

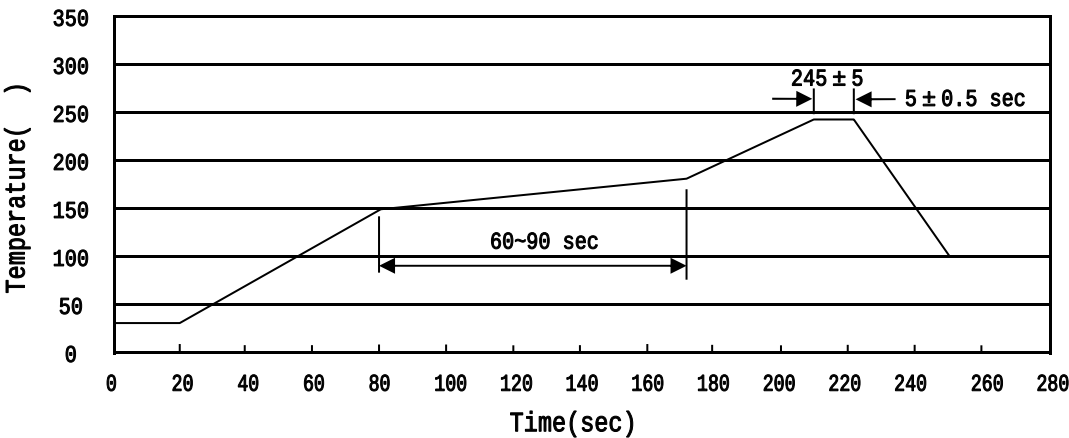




/ Marking Instructions



() / Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

- 1

150 180

60 90sec;

1.Preheating:150~180 , Time:60~90sec.
- 2

245 5

5 0.5sec;

2.Peak Temp.:245 5 , Duration:5 0.5sec.
- 3

2 10 /sec.

3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

260 5 10 1 sec. Temp.:260±5 Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension (unit mm ³)		
DFN2×2-8L	4,000	10	40,000	4	160,000	7 ×8	210×205×205	445×435×230

/ Notices

All information provided in this document is subject to legal disclaimers.