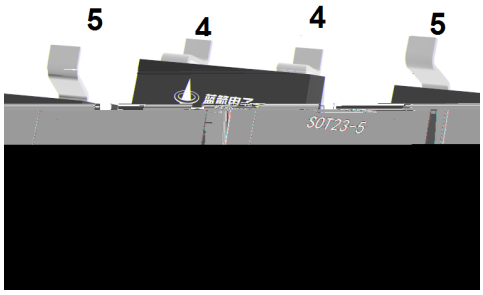
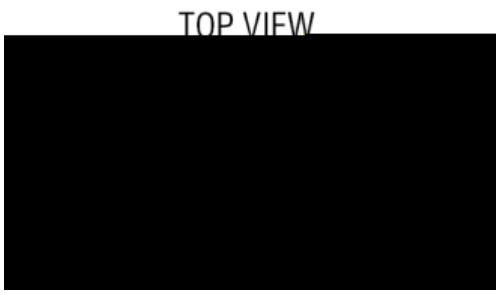
Rev.C Dec.-2025

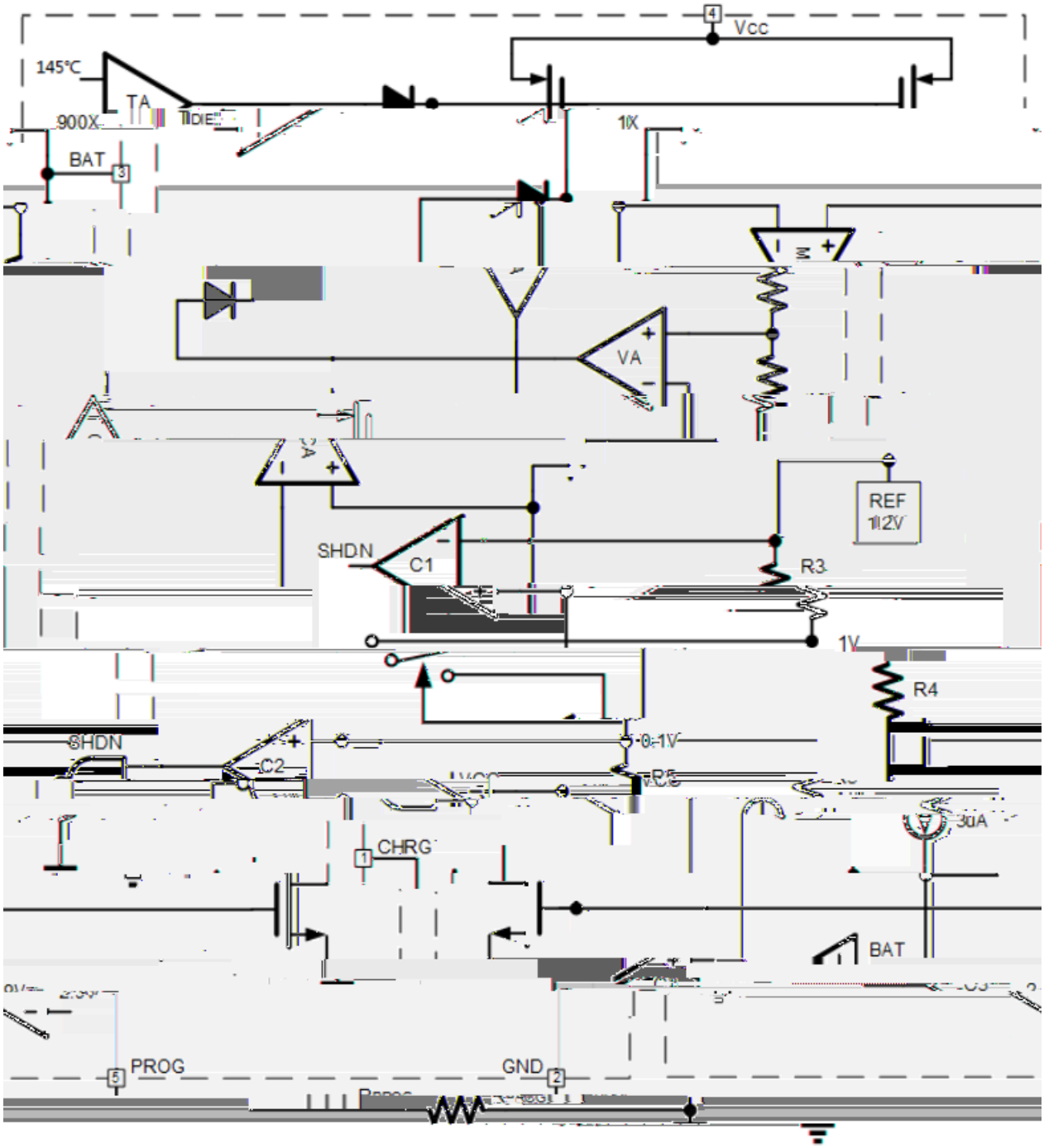




1	CHRG	
2	GND	
3	BAT	
4	VCC	
5	PROG	

Input Pin Voltage	V_{VCC}	-0.3~36	V
BAT Pin Voltage	V_{BAT}	-4.2~18	
Other Pin Voltage	V_{PROG}	-0.3~5.5	
CHRG Pin Voltage	V_{CHRG}	-0.3~13	
Storage Temperature	T_{stg}	-65~+150	
Junction Temperature	T_J	150	
Operating Ambient Temperature Range	T_{OP}	-40~+85	
Lead Temperature (Soldering, 10s)	T_{solder}	260	
Power onsumption	P_D	0.3	W
Junction-to-Ambient	$R_{\theta JA}$	250	/W
ESD	HBM	2000	V
	CDM	1000	V

Input Voltage Range	V_{CC}		4.5	5	36	V
Quiescent Supply Current	I_Q	Charge Mode R_{PROG}=2.05k		240	360	μA
		Standby Mode (Charge Terminated)		220	300	μA
		Shutdown Mode (R_{PROG} Not Connected, V_{CC} < V_{BAT}, or V_{CC} < V_{UV})		220	300	μA
		OVP state		120	250	μA
Regulated Output (Float)Voltage	V_{FLOAT}	0 ≤T_A≤85 , R_{PROG} = 2.05k	4.158	4.200	4.242	V
BAT Pin Current	I_{BAT}	R_{PROG} =2.05k, Current Mode	400	450	500	mA
		Standby Mode, V_{BAT} = 4.2V	0	-2.5	-6	μA
		Shutdown Mode (R_{PROG} Not Connected)		±1	±2	μA
		Sleep Mode, V_{CC} = 0V		-1	-2	μA
Trickle Charge Current	I_{TRIKL}	V_{BAT} < V_{TRIKL}, R_{PROG} = 2.05K	30	45	60	mA
Trickle Charge Threshold Voltage	V_{TRIKL}	R_{PROG} = 2.05k, VBAT Rising	2.3	2.5	2.7	V
Trickle Charge Hysteresis Voltage	V_{TRHYS}	R_{PROG} =2.05k	120	160	200	mV
VCC Undervoltage Lockout Threshold	V_{UV}	From V_{CC} Low to High	3.5	3.7	3.9	V
VCC Undervoltage Lockout Hysteresis	V_{UVHYS}	From V_{CC} High to Low	100	200	300	mV
VCC-VBAT Lockout Threshold Voltage	V_{ASD}	V_{CC} from Low to High	100	125	150	mV
		V_{CC} from High to Low	30	65	100	mV
C/10 Termination Current Threshold	I_{TERM}	R_{PROG} = 2.05k	40	45	50	mA
PROG Pin Voltage	V_{PROG}	R_{PROG} = 2.05k, Current Mode	0.9	1.0	1.1	V
CHRG Pin Output Low Voltage	V_{CHRG}	I_{CHRG} = 5mA		0.3	0.6	V
Recharge Battery Threshold Voltage	ş	L ¸ j M ` ˜ ' ő				


Vcc
145°C
TA
900X
BAT
1X
VA
REF
1.2V
SHDN
C1
R3
1V
R4
SHDN
C2
0.1V
CHRG
30A
BAT
PROG
GND

BRCL4058PME-4.2 / PCB
600mA ±1% BRCL4058PME-4.2 P
MOSFET
BRCL4058PME-4.2 USB

VCC UVLO 1% PROG
BAT 2.5V
BRCL4058PME-4.2 1/10
BAT 2.5V BAT

1/10

PROG PROG 100mV tTERM

BRCL4058PME-4.2 55μA

C/10

BAT PROG 1/10

100mV 1.8ms t_{TERM}

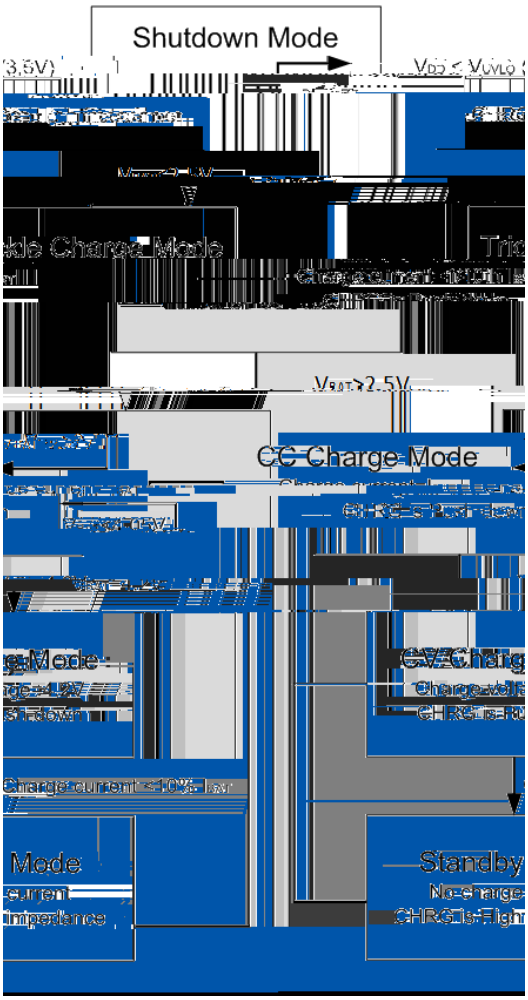
1/10 BRCL4058PME-4.2

BAT BAT

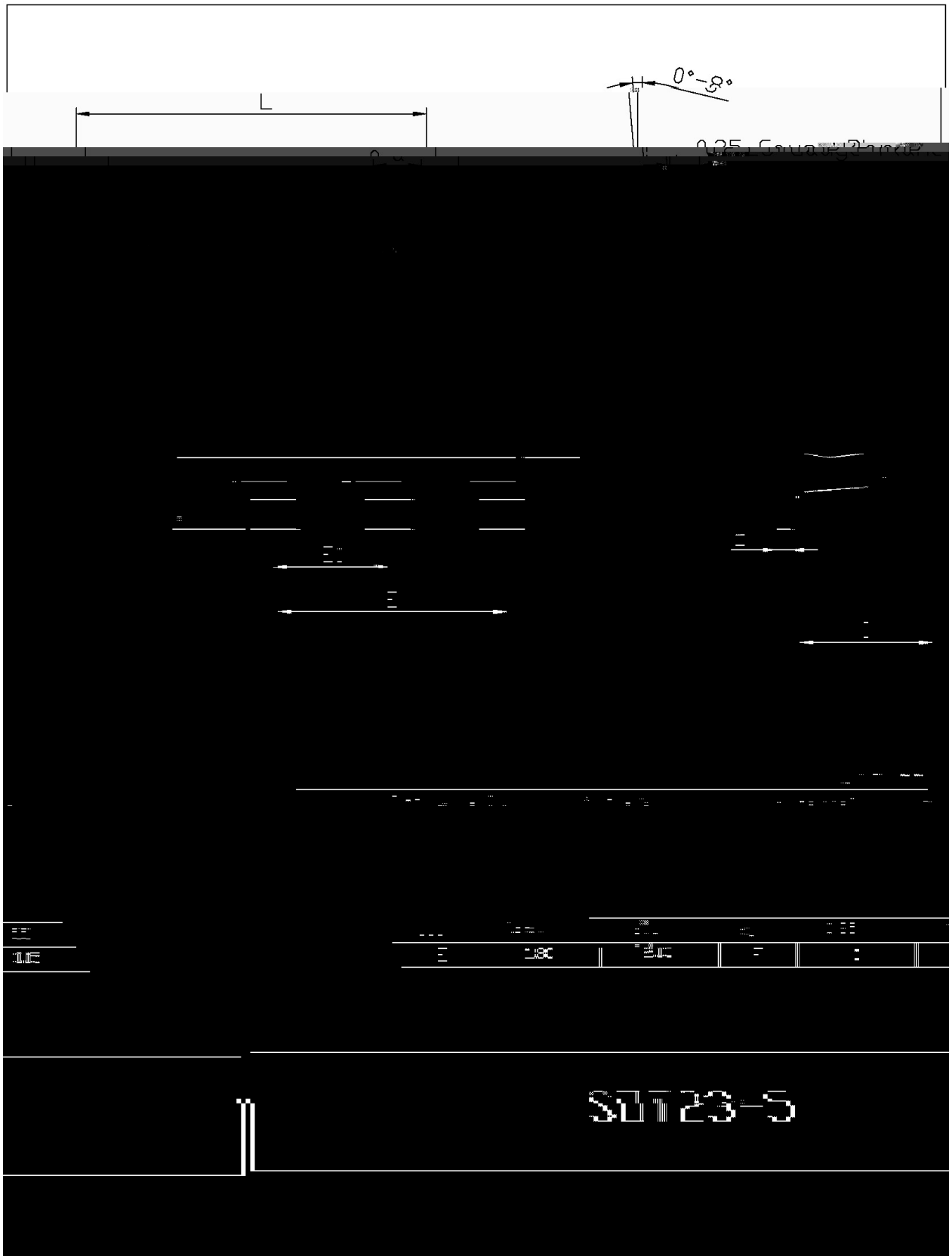
BRCL4058PME-4.2 BAT 4.05V

V_{RECHRG}

PROG



BRCL4058PME-4.2 CHRG BRCL4058PME-4.2
CHRG CHRG CHRG


L
0°-8°
SOT23-5