

5 é / Descriptions

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B , ä³}'k ¬}ÜB v y ŠyŠv8â'ož(8)2 @ @ Q¬}â5 Û «~^k
³o 9Ž`"• Å¿ož(8)2 @ @ É9- 9 <k¢† k- v* %² ÛB
Š—áož½²ò èUY~^ ôAûÝêñêË"†Aûä ž~1/ì"†Oò" ¶8
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,ÿµ 9 zg k Ç- k/ì... ÿµ€k P"†!OYCÙÁ6P^ ož

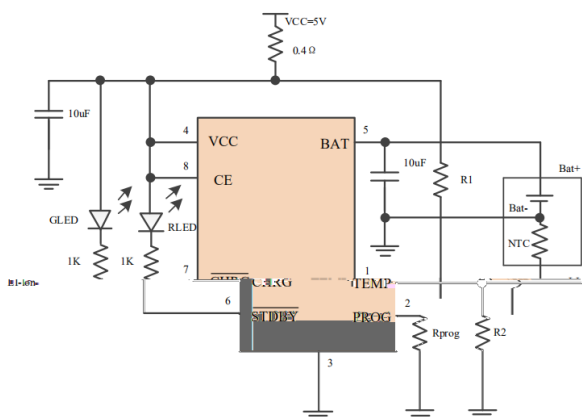
¤C⁻ / Features

- < UÚi- v 1.0A
- < ÿµ 98 y 4.5~6.5V
- < —¬Ü5MOSFETO• y ŠêŠv8â'
- < Ä—4.2V- 9k¢†r 1%
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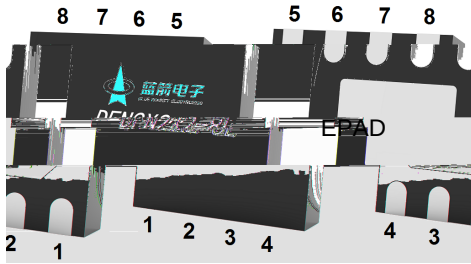
€ Ð / Applications

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€ Ð Ô · / Application Circuit



• Pinning



PIN Num.	Symbol	Function
1	TEMP	Temperature measurement pin. It is connected to the internal temperature sensor. The pin is active-low, meaning a low level indicates a high temperature.
2	PROG	Program pin. It is used to program the device. The pin is active-low, meaning a low level indicates programming is in progress.
3	-4*	Not connected.
4	VCC	Power supply pin. It is connected to the positive power supply.
5	BAT	Battery pin. It is connected to the battery.
6	9:*(?)	Not connected.
7	).8-	Not connected.
8	CE	Chip Enable pin. It is used to enable the device. The pin is active-low, meaning a low level indicates the device is enabled.
9	EPAD	Exposed Pad pin. It is used for heat dissipation.

• Absolute Maximum Ratings(Ta=25 °C)

PARAMETER	SYMBOL	RATINGS	UNITS
Input Supply Voltage		-0.3~10	V
TEMP, CE, PROG Pins Voltage		-0.3~V _{CC} +0.3	
BAT Pin Voltage		-0.3~8	
STDBY, CHRG Pins Voltage		-0.3~10	
STDBY, CHRG Pins Output sink current		10	mA
Operating Ambient Temperature Range	T _A	-40~85	°C
Junction Temperature	T _J	-40~150	°C
Storage Temperature	T _{stg}	-40~125	°C

1 Absolute Maximum Ratings(Ta=25 °C)

PARAMETER	SYMBOL	RATINGS	UNITS
Lead Temperature (Soldering, 10s)	T _{solder}	260	°C
ESD	HBM	2000	V
	MM	200	V

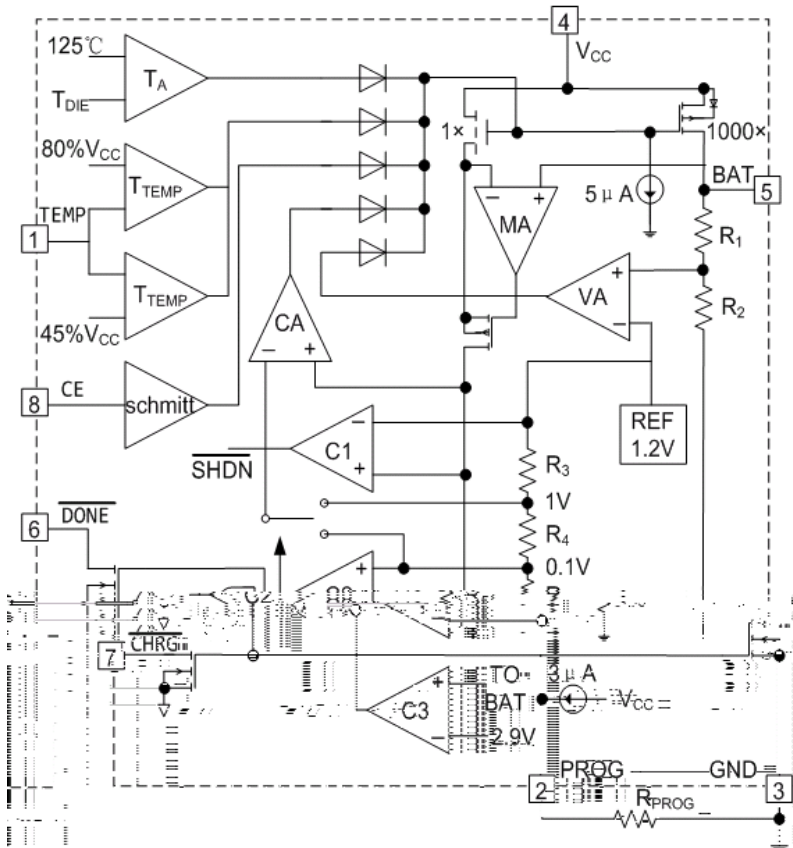
2 Electrical Characteristics(Ta=25 °C)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Input Supply Voltage			4.5		6.5	V
V _{CC} Under voltage Lockout Threshold	V _{UVL}	V _{CC} from Low to High		3.9		V
V _{CC} Under voltage Lockout Hysteresis	ΔV _{UVL}			150		mV
Input Supply Current	I _{CC}	Charge Mode, R _{PROG} =10K		150	500	μA
		Standby Mode (Charge Terminated)		50	100	
		Shutdown Mode: R _{PROG} Not Connected, V _{CC} <V _{BAT} , or V _{CC} <V _{UVL}		50	100	
CE "High" Level Voltage	V _{CEH}		1.5		V _{CC}	V
CE "Low" Level Voltage	V _{CEL}				0.4	V
Trickle Charge Threshold	V _{TRIKL}	R _{PROG} =10K, V _{BAT} Rising		2.9		V
Trickle Charge Hysteresis	ΔV _{TRIKL}	R _{PROG} =10K		100		mV
Trickle Charge Current	I _{TRIKL}	R _{PROG} =1K	90	100	110	mA
BAT Pin Current	I _{BAT}	R _{PROG} =1K, Current Mode(V _{BAT} =4.0V)	900	1000	1100	mA
		R _{PROG} =2K, Current Mode(V _{BAT} =4.0V)	450	500	550	
		Standby Mode, V _{BAT} =V _{FLOAT}	0	-2.5	-6.0	μA
		Shutdown Mode (R _{PROG} Not Connected)		f 1	f 2	
		Sleep Mode, V _{CC} =0V			-2	
PROG Pin Voltage	V _{PROG}	R _{PROG} =1K, Current Mode	0.9	1.0	1.1	V
PROG Pin Pull-Up Current	I _{PROG}			3		μA
Regulated Output (Float) Voltage	V _{FLOAT}	R _{PROG} =10K	4.158	4.200	4.242	V
C/10 Termination Current Threshold	I _{TERM}	R _{PROG} =1K		0.1		mA/mA

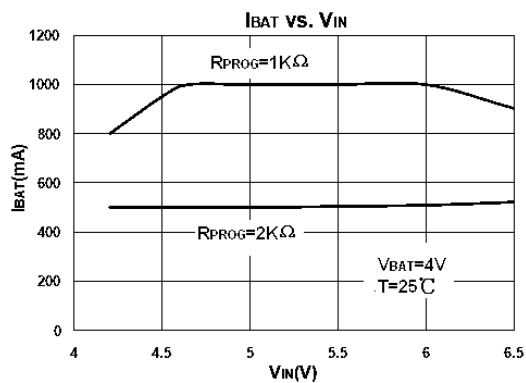
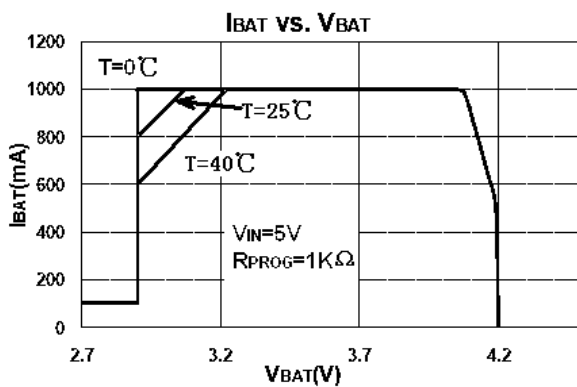
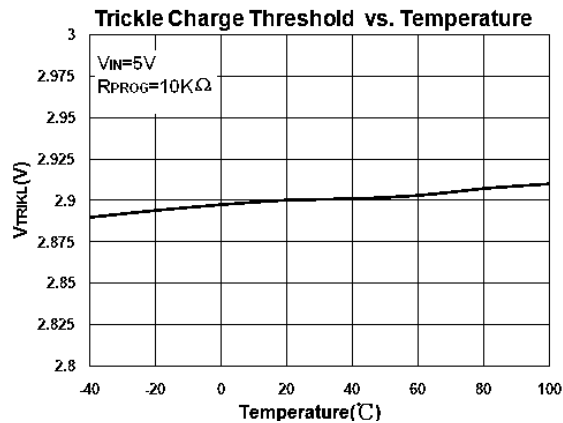
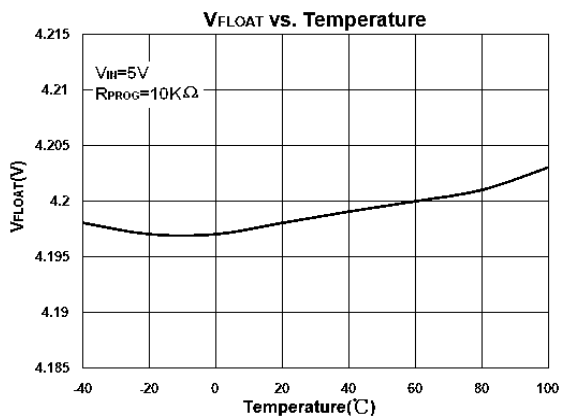
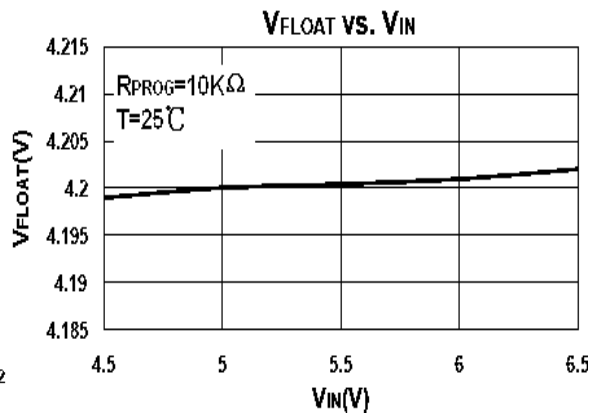
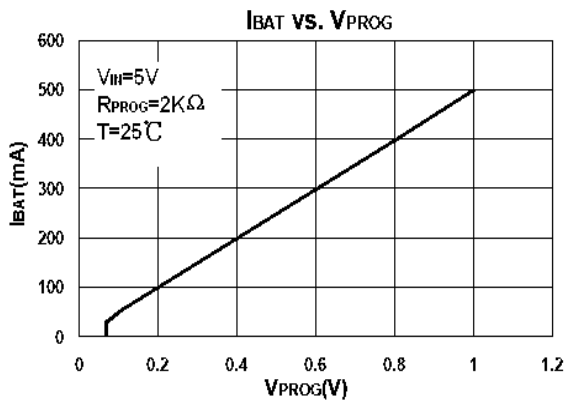
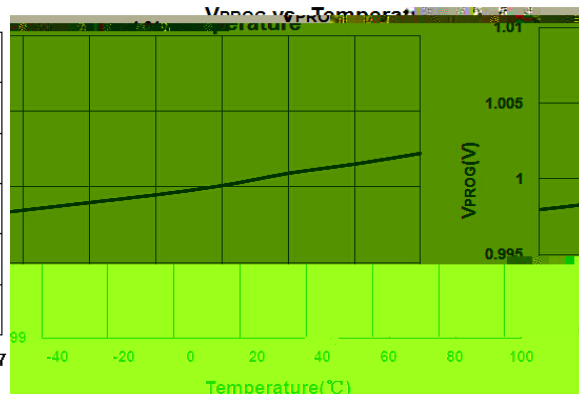
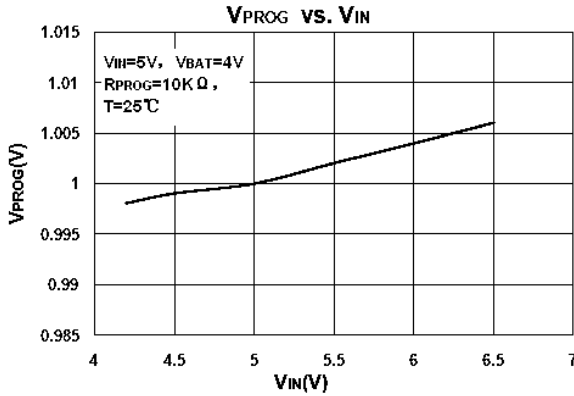
4. Electrical Characteristics (Ta=25°C)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Termination Comparator Filter Time	t_{Term}	I_{BAT} Falling Below I_{TERM}	0.3	0.8	2.0	mS
Recharge Battery Threshold	V_{RECHG}	$V_{FLOAT} - V_{RECHG}$		150		mV
Recharge Comparator Filter Time	$t_{RECHARGE}$	V_{BAT} High to Low	0.3	0.8	2.0	mS
$V_{CC} - V_{BAT}$ Lockout Threshold	A_{MSD}	V_{CC} from Low to High		100		mV
		V_{CC} from High to Low		80		mV
TEMP High Shift Voltage Level			76	80	82	%V _{CC}
TEMP Low Shift Voltage Level			43	45	49	
Soft-Start Time	t_{SS}	$I_{BAT}=0$ to $I_{BAT}=1000V/R_{PROG}$		20		μS
Power FET “ON” Resistance (Between V_{CC} and BAT)	R_{ON}	$I_{BAT}=1000mA$		400		m
Junction Temperature in Constant Temperature Mode	$T_{J(REG)}$			125		°C

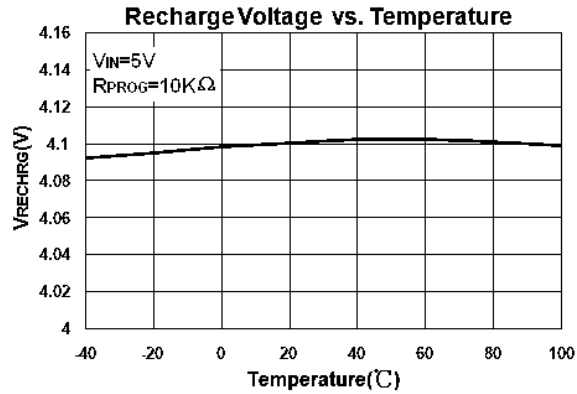
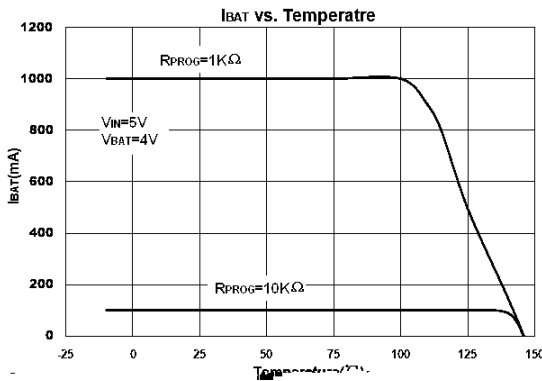
< Â ¢ / Principle block diagram



Electrical Characteristic Curve

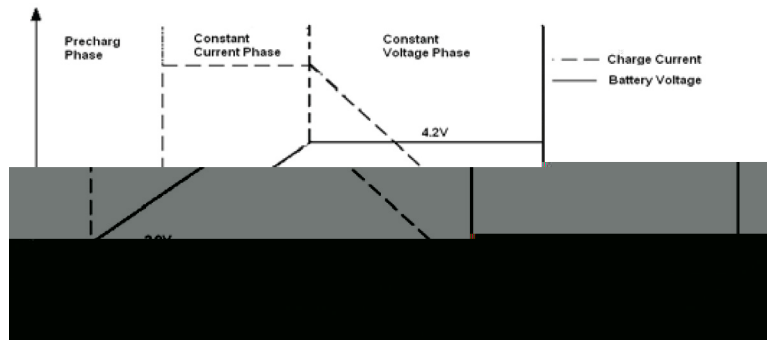


Electrical Characteristic Curve



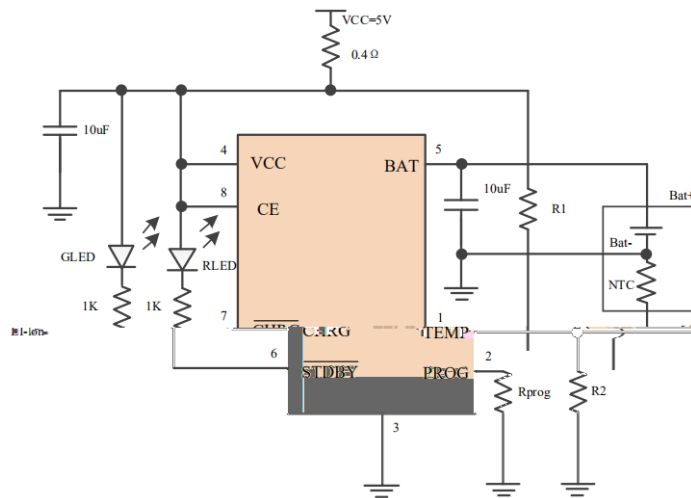
Description of the Principle

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V € < Â / Description of the Principle

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$$V_{TEMPH} = \frac{R_2 // R_{TH}}{R_1 + R_2 // R_{TH}} \times V_{IN}$$

" † : 2 ž k † %² ' : + 3 6 € 9

$$\frac{V_{TEMPH}}{2 // R_{TH}} = \frac{R_2 // R_{TH}}{R_1 + R_2 // R_{TH}} \times V_{IN}$$

V € < Â / Description of the Principle

À e k < : + 3 6 # < / - . # 1 < 4 g 1 # h
: + 3 6 . # < 5 = # 1 < 4 g 1 # h
é U † ±

$$R1 = \frac{R_{TL} R_{TH} (K_2 - K_1)}{(R_{TL} - R_{TH}) K_1 K_2}$$

$$\frac{R_{TL} R_{TH} (K_2 - K_1)}{(R_{TL} - R_{TH}) K_1 K_2} = \frac{R_{TL} R_{TH} (K_2 - K_1)}{R_{TL} (K_1 - K_1 K_2)}$$

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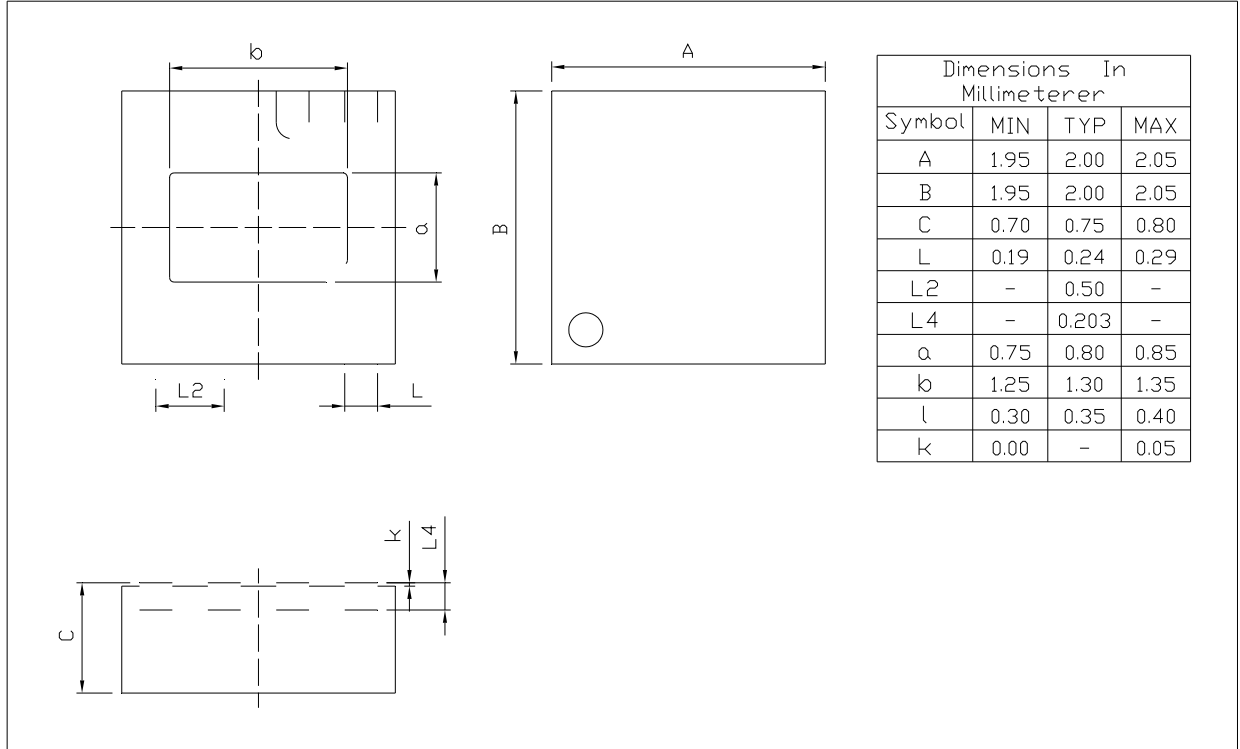
$$R1 = \frac{R_{TL} R_{TH} (K_2 - K_1)}{(R_{TH} - R_{TL}) K_1 K_2}$$

$$! = \frac{R_{TL} R_{TH} (K_2 - K_1)}{R_{TH} (K_1 - K_1 K_2) - R_{TL} (K_2 - K_1 K_2)} R2$$

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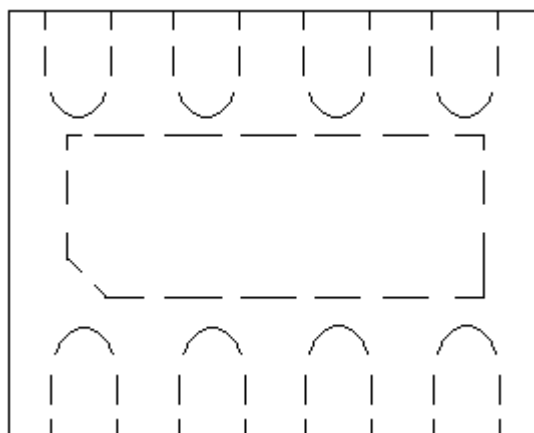
Ø □ =) ⌀ / Package Dimensions

DFN2 x2-8L-0.75 Unit:mm



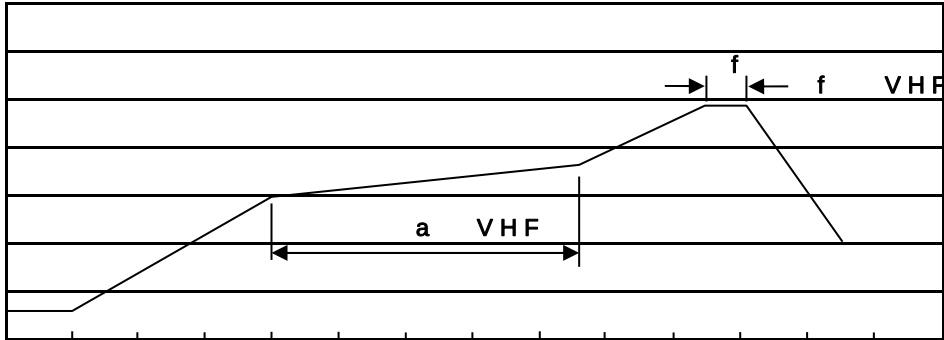
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7HPSHUDWXXUH



7LPH VHF

ačy

Note:

10•Ä½“† 150½180 - kž • 60½90sec;

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

20•Q>“† 245 r5 - kž • 4 Ò 5 r0.5sec;

2.Peak Temp.:245 r5 - , Duration:5 r0.5sec.

30•D Nò i Ò 0 ,† 2½10 - /sec.

3. Cooling Speed: 2~10 - /sec.

ÂD /Că p ~ »] / Resistance to Soldering Heat Test Conditions

“† y 260 r5 -

ž • y 10 r1 sec.

Temp.:260 r5 -

Time:10 r1 sec

G P á / Packaging SPEC.

2 & x / REEL

Package Type 7>û ~ E	Units ;>û !H					Dimension ;>û p . (unit Åmm³)		
	Units/Reel / --	Reels/Inner Box -- /-	Units/Inner Box /-	Inner Boxes/Outer Box - /1ç	Units/Outer Box /1ç	Reel	Inner Box	Outer Boxç
DFN2×2-8L	4,000	10	40,000	4	160,000	7 s ×8	210×205×205	445×230×435

„Đ y f / Notices