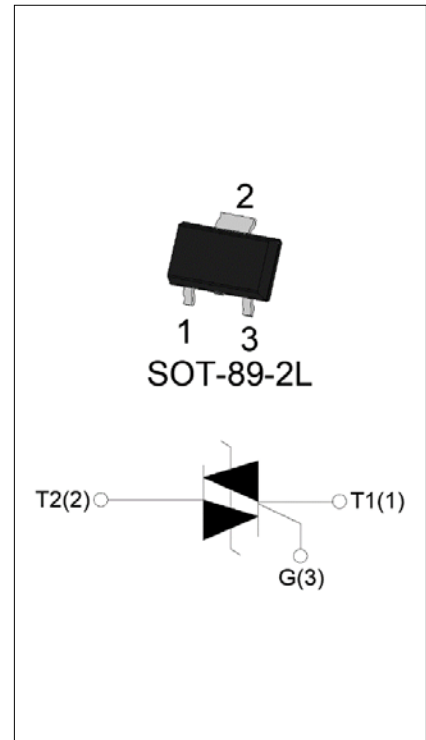


ACJT105-10N2 1A TRIAC

Rev.A.1.1

DESCRIPTION:

The ACJT105-10N2 triac is suitable for general purpose AC switching. It can be used as an ON/OFF function in applications such as heating regulation, induction motor starting circuits, for phase control operation in light dimmers, motor speed controllers. The ACJT105-10N2 embeds a TVS structure to absorb the inductive turn-off energy such as those described in the IEC 61000-4-5 standards. Package SOT-89-2L is RoHS compliant.


MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	1	A
V_{DRM}/V_{RRM}	1000	V
$I_{GT\ I/II/III}$	5/5/5	mA

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	°C
Operating junction temperature range	T_j	-40-125	°C
Repetitive peak off-state voltage ($T_j=25^{\circ}C$)	V_{DRM}	1000	V
Repetitive peak reverse voltage ($T_j=25^{\circ}C$)	V_{RRM}	1000	V
RMS on-state current ($T_c \leq 77^{\circ}C$)	$I_{T(RMS)}$	1	A
Non repetitive surge peak on-state current (full cycle , $t_p=20ms$, $T_j=25^{\circ}C$)	I_{TSM}	15	A
Non repetitive surge peak on-state current (full cycle , $t_p=16.6ms$, $T_j=25^{\circ}C$)		16.5	
I^2t value for fusing ($t_p=10ms$, $T_j=25^{\circ}C$)	I^2t	1.25	A ² s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$, $f=100Hz$, $T_j=125^{\circ}C$)	di/dt	50	A/ μs
Peak gate current ($t_p=20\mu s$, $T_j=125^{\circ}C$)	I_{GM}	2	A
Average gate power dissipation ($T_j=125^{\circ}C$)	$P_{G(AV)}$	0.1	W
Peak gate power	P_{GM}	5	W

Peak pulse voltage ($T_j=25^{\circ}\text{C}$; non-repetitive, off-state; FIG.8)	V_{pp}	3.5	kV
--	----------	-----	----

ELECTRICAL CHARACTERISTICS ($T_j=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
I_{GT}	$V_D=12\text{V}$ $R_L=33\Omega$	I - II - III	MAX.	5	mA
V_{GT}		I - II - III	MAX.	1	V
V_{GD}	$V_D=V_{DRM}$ $T_j=125^{\circ}\text{C}$ $R_L=3.3\text{k}\Omega$	I - II - III	MIN.	0.2	V
I_L	$I_G=1.2I_{GT}$	I - III	MAX.	10	mA
		II		20	
I_H	$I_T=100\text{mA}$		MAX.	10	mA
dV/dt	$V_D=670\text{V}$ Gate Open $T_j=125^{\circ}\text{C}$		MIN.	500	V/ μs
$(dI/dt)_c$	$(dV/dt)_c=10\text{V}/\mu\text{s}$, $T_j=125^{\circ}\text{C}$		MIN.	0.5	A/ms
t_{on}	$I_G=10\text{mA}$ $I_A=200\text{mA}$ $I_R=20\text{mA}$ $T_j=25^{\circ}\text{C}$		TYP.	2.5	μs
t_{off}				35	
V_{CL}	$I_{CL}=0.1\text{mA}$ $t_p=1\text{ms}$		MIN.	1050	V

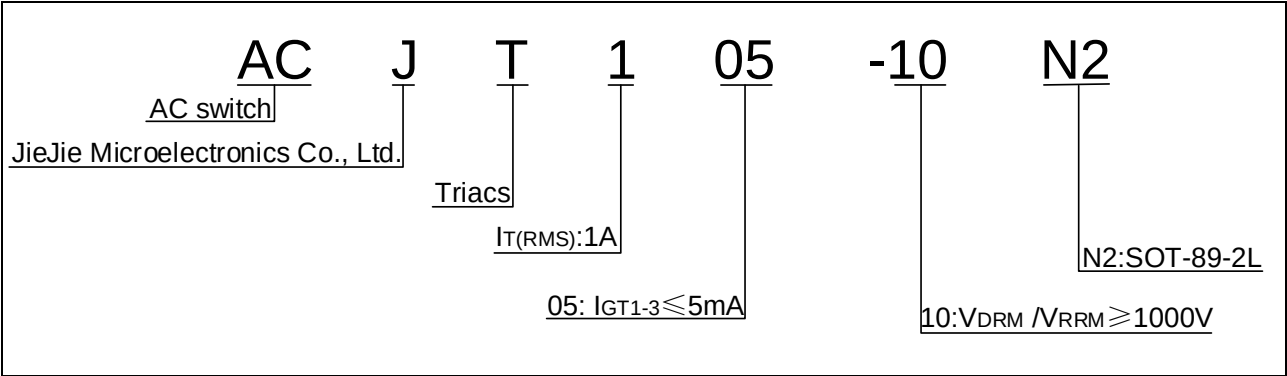
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=1.1\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.4	V
V_{TO}	Threshold voltage	$T_j=125^{\circ}\text{C}$	0.8	V
R_D	Dynamic resistance	$T_j=125^{\circ}\text{C}$	287	$\text{m}\Omega$
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	8	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	0.4	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	35	$^{\circ}\text{C}/\text{W}$
$R_{th(j-a)}$	junction to ambient (AC, in free air, $S=5\text{cm}^2$)	80	$^{\circ}\text{C}/\text{W}$

ORDERING INFORMATION



MARKING

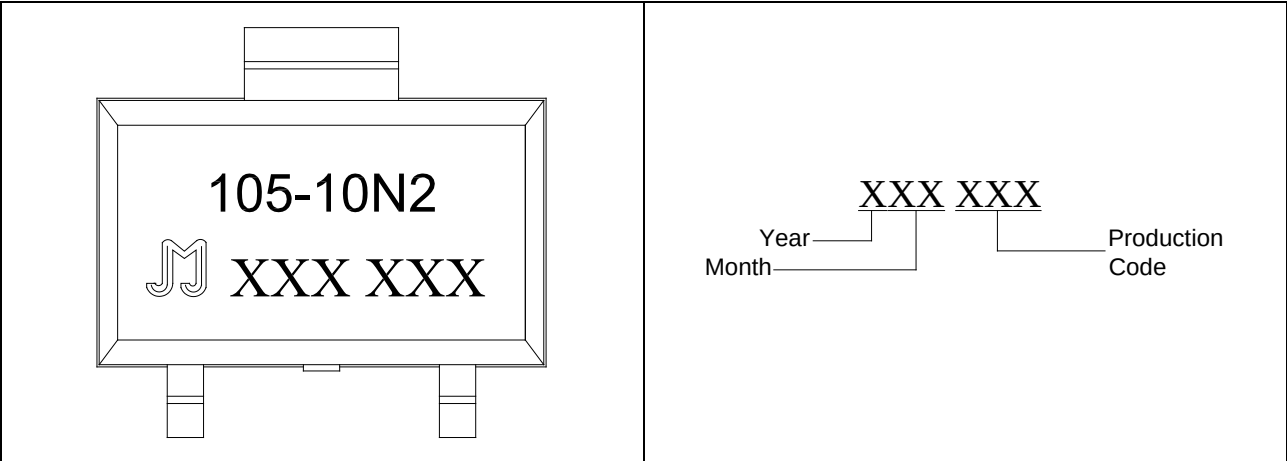


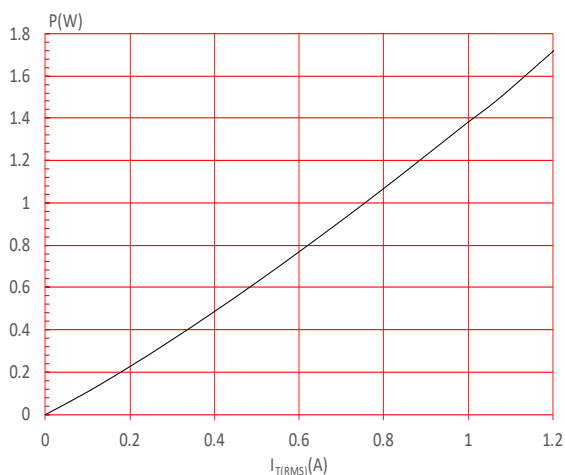
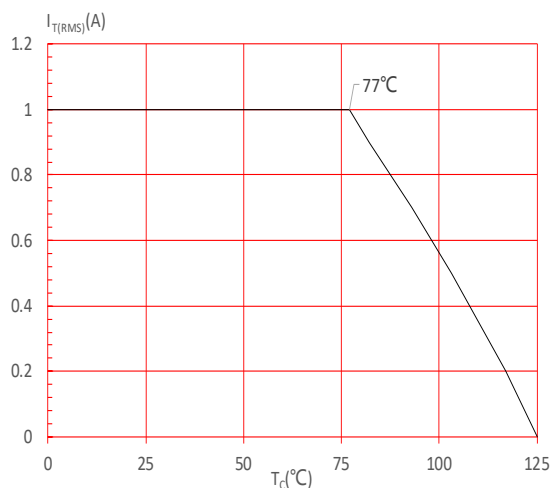
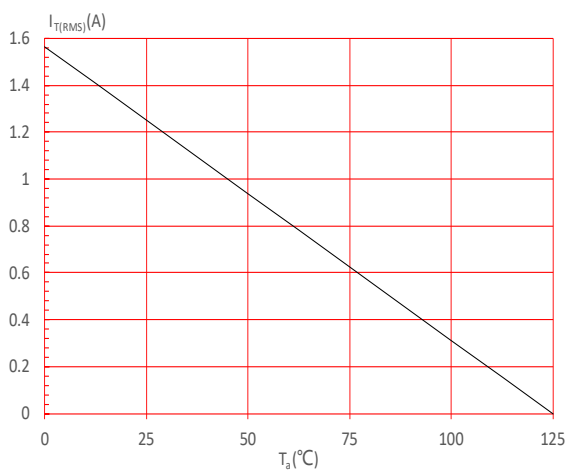
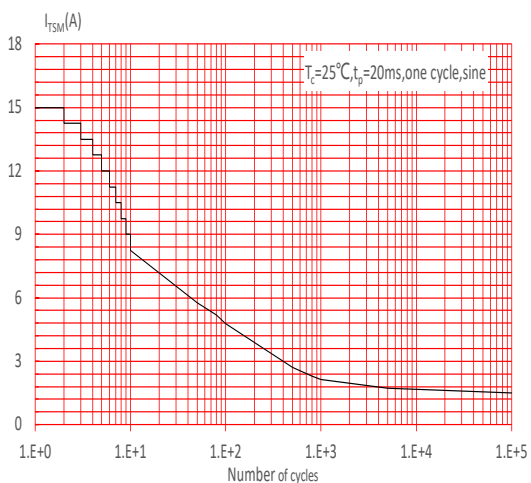
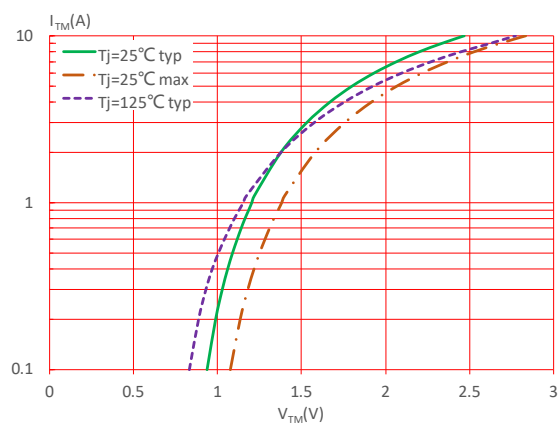
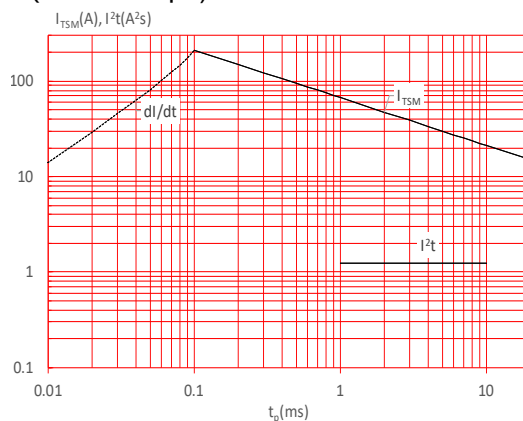
FIG.1: Maximum power dissipation versus RMS on-state current

FIG.2: RMS on-state current versus case temperature

FIG.3: RMS on-state current versus ambient temperature (printed circuit board FR4, copper thickness:35μm)(full cycle)

FIG.4: Surge peak on-state current versus number of cycles

FIG.5: On-state characteristics

FIG.6: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20ms$, and corresponding value of I^2t ($di/dt < 50A/μs$)


FIG.7: Relative variations of gate trigger current, holding current and latching current versus junction temperature

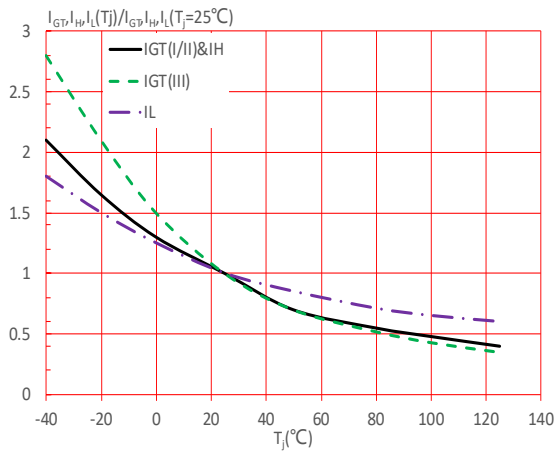
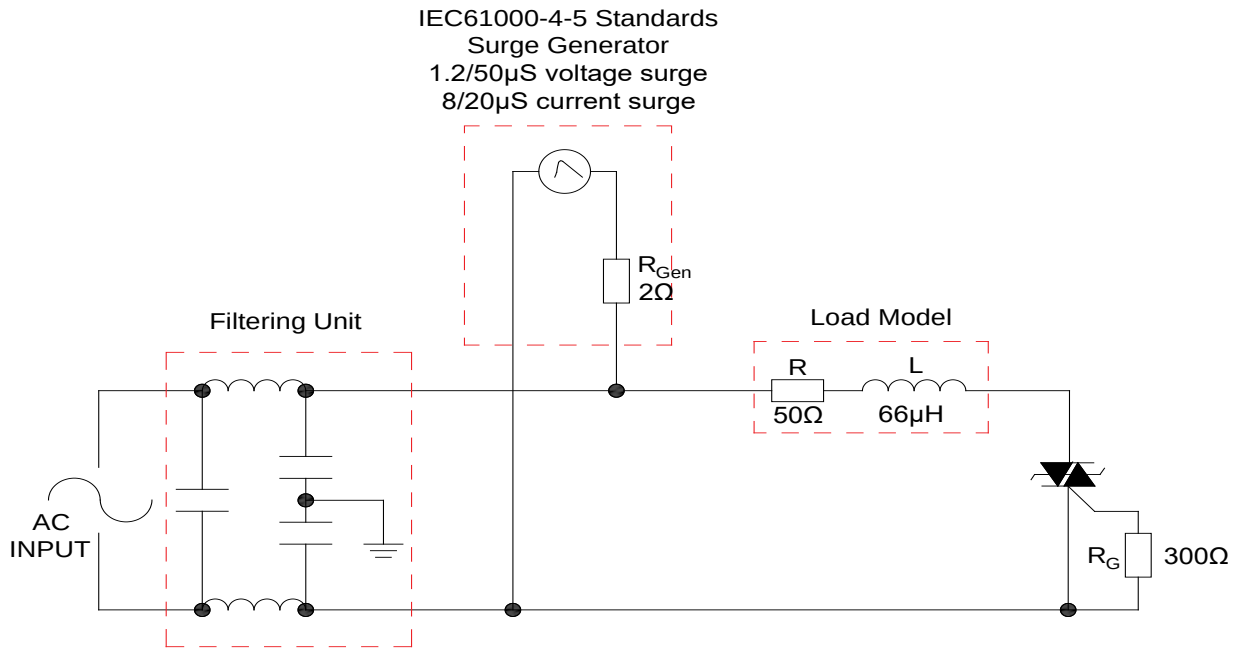
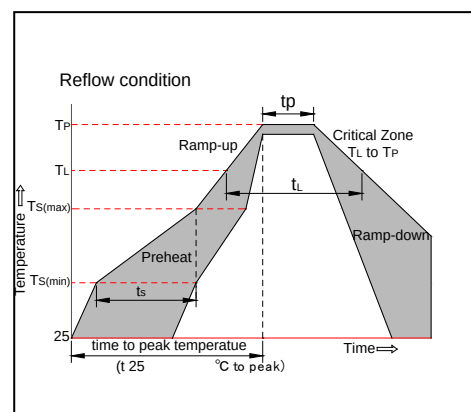


FIG.8: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquidus)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		20-40secs.
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260°C



ORDERING INFORMATION

Order code	Voltage $V_{\text{DRM}}/V_{\text{RRM}}$ (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
ACJT105-10N2	1000	5	SOT-89-2L	4,000	Tape & Reel

Document Revision History

Date	Revision	Changes
Apr.13, 2023	A.1.0	Last updated
Oct.16, 2025	A.1.1	Revise PACKAGE MECHANICAL DATA

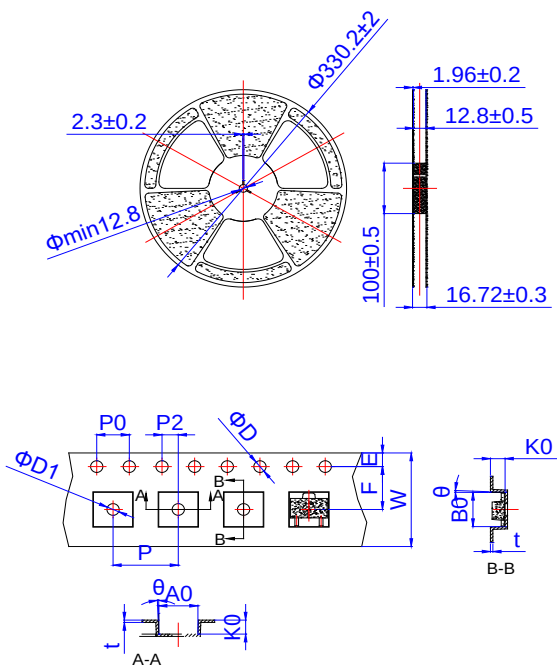
Technical drawing of a rectangular box with dimensions labeled in blue. The drawing includes three views: a top view, a front view, and a side view. The dimensions are as follows:

- Top View:** Dimensions A (height of the top flange), A1 (total height), B (width of the top flange), and D (total width).
- Front View:** Dimensions E (height of the main body), F (width of the main body), F1 (width of the base flange), B1 (width of the base flange), and J (total height).
- Side View:** Dimensions C (width of the top flange), K1 (width of the top flange), H (height of the main body), G (width of the main body), and K (width of the base flange).

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.3	1.4	1.5	0.051	0.055	0.059
A1	0.01	0.06	0.10	0.001	0.002	0.004
B	1.6	1.7	1.8	0.063	0.067	0.071
B1	0.3	0.4	0.5	0.012	0.016	0.020
C	0.22	0.254	0.32	0.009	0.010	0.013
D	4.75	4.95	5.15	0.187	0.195	0.203
E	2.90		3.30	0.114		0.130
F	2.80		3.20	0.110		0.126
F1	1.40		1.60	0.055		0.063
G	0.20	0.30	0.40	0.008	0.012	0.016
H	0.58	0.78	0.98	0.023	0.031	0.039
J	4.30	4.50	4.70	0.169	0.177	0.185
K	0.80		1.00	0.031		0.039
K1	0.50		0.60	0.020		0.024

Technical drawing of a stepped block. The block consists of a main rectangular body and two smaller rectangular blocks attached to its top surface. The main body has a width of 4.2 and a height of 2. The two smaller blocks are positioned on top of the main body, with a total width of 1.5. The distance between the left edge of the main body and the left edge of the smaller blocks is 0.8. The distance between the right edge of the main body and the right edge of the smaller blocks is 0.8. The height of the smaller blocks is 0.8. The total height of the block is 3.

DELIVERY MODE



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
E	1.65	1.75	1.85	0.065	0.069	0.073
F	5.45	5.50	5.55	0.215	0.217	0.219
P2	1.90	2.00	2.10	0.075	0.079	0.082
D	-	1.50	1.60	-	0.059	0.063
D1	1.50	-	-	0.059	-	-
P0	3.90	4.00	4.10	0.154	0.157	0.161
10P0	39.80	40.00	40.20	1.567	1.575	1.583
W	-	-	12.30	-	-	0.482
P	7.90	8.00	8.10	0.311	0.315	0.319
A0	5.20	5.30	5.40	0.204	0.208	0.212
B0	4.80	4.90	5.00	0.188	0.192	0.196
K0	1.75	1.85	1.95	0.069	0.073	0.076
t	0.20	0.25	0.30	0.008	0.010	0.012
θ	3°		5°	3°		5°

PACKAGE	OUTLINE	REEL (PCS)	PER CARTON (PCS)	TAPE & REEL
SOT-89-2L	TAPING	4,000	40,000	13 inch

Information furnished in this document is believed to be accurate and reliable. However, Jiangsu JieJie Microelectronics Co., Ltd. assumes no responsibility for the consequences of use without consideration for such information nor use beyond it. Information mentioned in this document is subject to change without notice, apart from that when an agreement is signed, Jiangsu JieJie complies with the agreement.

Products and information provided in this document have no infringement of patents. Jiangsu JieJie assumes no responsibility for any infringement of other rights of third parties which may result from the use of such products and information. This document supersedes and replaces all information previously supplied.

 is a registered trademark of Jiangsu JieJie Microelectronics Co., Ltd.
Copyright © 2025 Jiangsu JieJie Microelectronics Co., Ltd. All rights reserved.