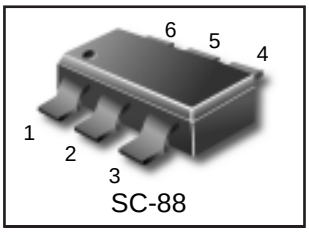
Power Management(dual transistors)

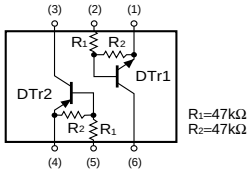
LUMD12NDW1T1G



●Application
Power management circuit

●Features
1) Power switching circuit in a single package.
2) Mounting cost and area can be cut in half.
3) We declare that the material of product compliance with RoHS requirements.

●Structure
Silicon epitaxial planar transistor



DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LUMD12NDW1T1G	13	3000/Tape&Reel
LUMD12NDW1T3G	13	10000/Tape&Reel

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Supply voltage	V_{CC}	50	V
Input voltage	V_{IN}	−10~+40	V
Collector current	I_C	100	mA
Output current	I_O	30	mA
Power dissipation	P_D	150(TOTAL)	mW *1
Junction temperature	Tj	150	℃
Range of storage temperature	Tstg	−55 to +150	℃

*1 120mW per element must not be exceeded.
PNP type negative symbols have been omitted

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	$V_{I(off)}$	–	–	0.5	V	V_{CC}=5/-5V, I_O=100/-100μA
	$V_{I(on)}$	3	–	–		V_O=0.3/-0.3V, I_O=2/-2mA
Output voltage	$V_{O(on)}$	–	0.1	0.3	V	I_O=10/-10mA, I_I=0.5/-0.5mA,
Input current	I_I	–	–	0.18	mA	V_I=5/-5V
Output current	$I_{O(off)}$	–	–	0.5	μA	V_{CC}=50/-50V, V_I=0V
DC current gain	G_I	68	–	–	–	V_O=5/-5V, I_O=5/-5mA
Input resistance	R_1	32.9	47	61.1	kΩ	–
Resistance ratio	R_2/R_1	0.8	1	1.2	–	–
Transition frequency	f_T	–	250	–	MHz	V_{CE}=10/-10V, I_E=−5/5mA, f=100MHz*

* Transition frequency of the device. PNP type negative symbols have been omitted

LUMD12NDW1T1G

●Electrical characteristics curves DTr1

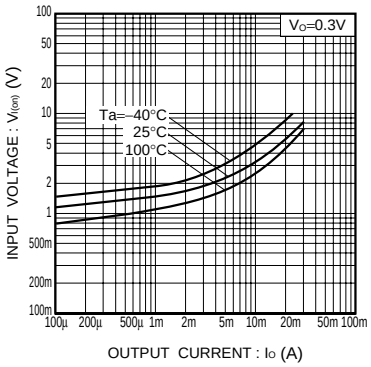


Fig.1 Input voltage vs. output current (ON characteristics)

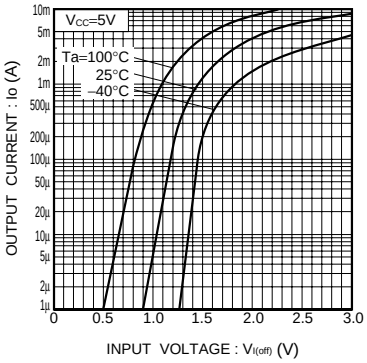


Fig.2 Output current vs. input voltage (OFF characteristics)

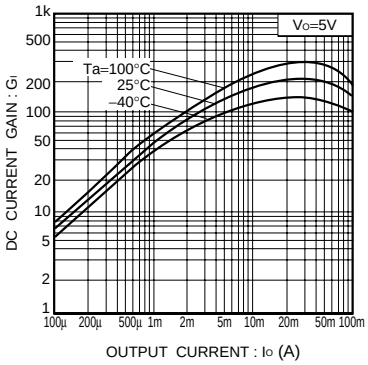


Fig.3 DC current gain vs. output current

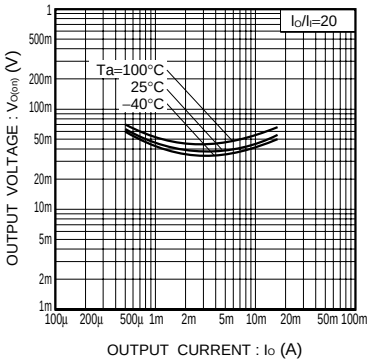


Fig.4 Output voltage vs. output current

LUMD12NDW1T1G

●Electrical characteristics curves DTr2

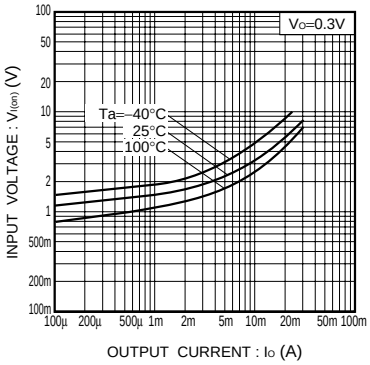


Fig.1 Input voltage vs. output current (ON characteristics)

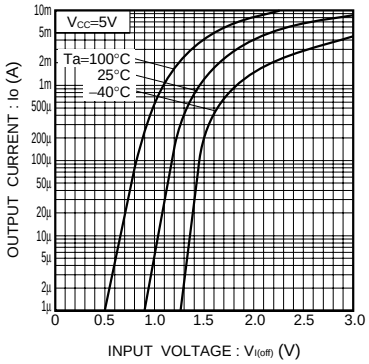


Fig.2 Output current vs. input voltage (OFF characteristics)

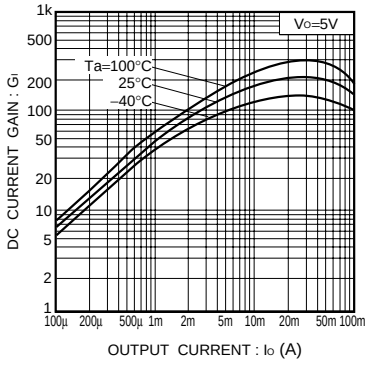


Fig.3 DC current gain vs. output current

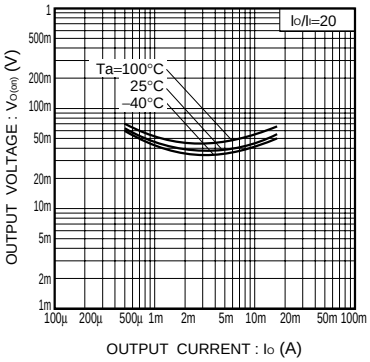


Fig.4 Output voltage vs. output current

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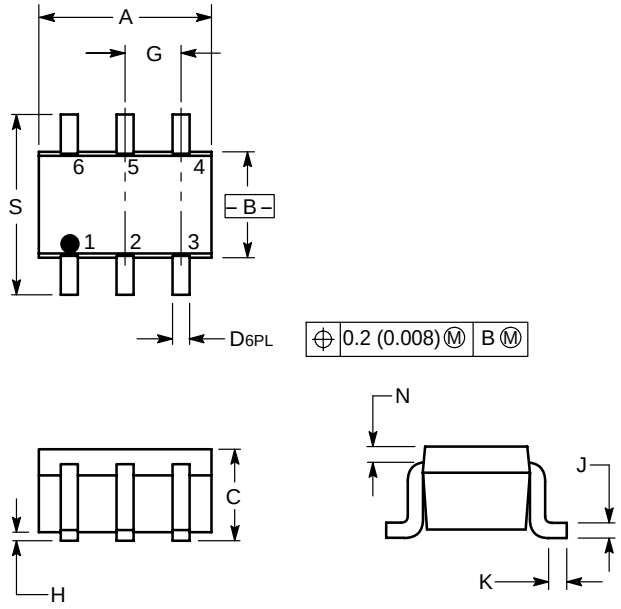

NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.071	0.087	1.80	2.20
B	0.045	0.053	1.15	1.35
C	0.031	0.043	0.80	1.10
D	0.004	0.012	0.10	0.30
G	0.026 BSC		0.65 BSC	
H	---	0.004	---	0.10
J	0.004	0.010	0.10	0.25
K	0.004	0.012	0.10	0.30
N	0.008 REF		0.20 REF	
S	0.079	0.087	2.00	2.20

PIN 1. EMITTER 2
2. BASE 2
3. COLLECTOR 1
4.EMITTER 1
5. BASE 1
6.COLLECTOR 2