General purpose transistor (isolated transistor and diode)

EML17

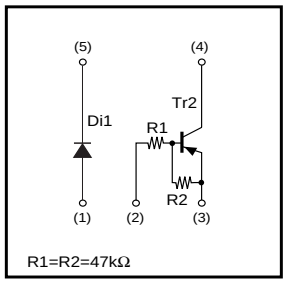
DTA144E and a RB520G-30 are housed independently in a EMT package.

●Applications
DC / DC converter
Motor driver

●Features
1) Tr : Degital Transistor
Di : Low V_F
2) Small package

●Structure
Silicon epitaxial planar degital transistor
Schottky barrier diode

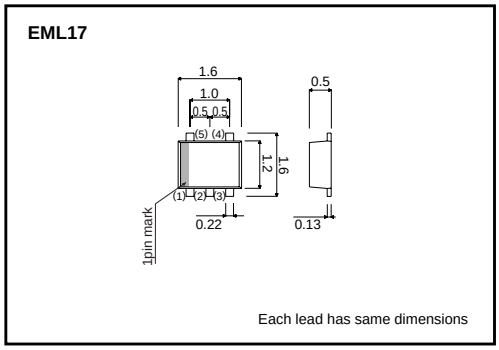
●Equivalent circuit



●Packaging specifications

Type	EML17
Package	EMT5
Marking	L17
Code	T2R
Basic ordering unit (pieces)	8000

●External dimensions (Unit : mm)



●**Absolute maximum ratings** (Ta=25°C)

Di1

Parameter	Symbol	Limits	Unit
DC current voltage	V_R	30	V
Mean rectifying current	I_O	100	mA
Forward peak surge current (60Hz・1cyc.)	I_{FSM}	500	mA
Junction temperature	Tj	125	°C
Storage temperature	Tstg	–40 to +125	°C

∗ 60Hz, 1

Tr2

Parameter	Symbol	Limits	Unit
Supply voltage	V_{CC}	–50	V
Input voltage	V_{IN}	–40 to +10	V
Output current	I_O	–30	mA
	$I_{C(MAX)}$	–100	
Power dissipation	Pd	120	mW
Junction temperature	Tj	150	°C

Di1, Tr2

Parameter	Symbol	Limits	Unit
Power dissipation	Pd	150	mW ∗
Range of storage temperature	Tstg	–55 to +125	°C

∗ Each terminal mounted on a recommended land.

●**Electrical characteristics** (Ta=25°C)

Di1

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward voltage	V_F	–	–	0.45	V	I_F=10mA
Reverse current	I_R	–	–	0.5	μA	V_R=10V

∗ Please pay attention to static electricity when handling.

Tr2

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	$V_{I(off)}$	–	–	–0.5	V	I_C= –5V, I_O= –100μA
	$V_{I(on)}$	–3.0	–	–		V_O= –0.3V, I_O= –2mA
Output voltage	$V_{O(on)}$	–	–0.1	–0.3	V	I_O/I_I= –10mA/ –0.5mA
Input current	I_I	–	–	–0.18	mA	V_I= –5V
Output current	$I_{O(off)}$	–	–	–0.5	μA	V_{CC}= –50V, V_I=0V
DC current gain	G_1	68	–	–	–	V_O= –5V, I_O= –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}= –10V, I_E=5mA, f=100MHz ∗

∗ Transition frequency of the device

●**Electrical characteristic curves**

Di1

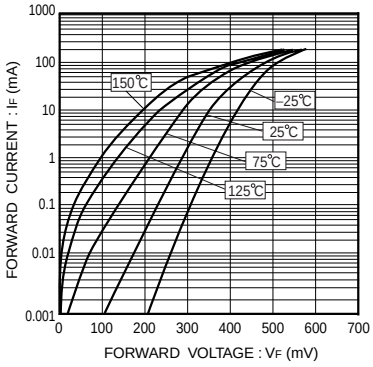


Fig.1 Forward characteristics

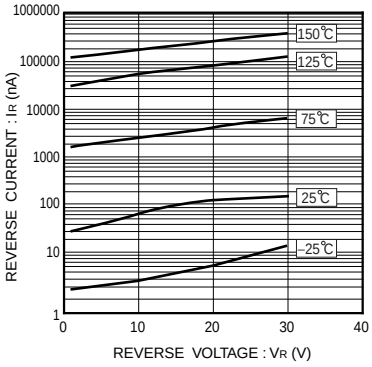


Fig.2 Reverse characteristics

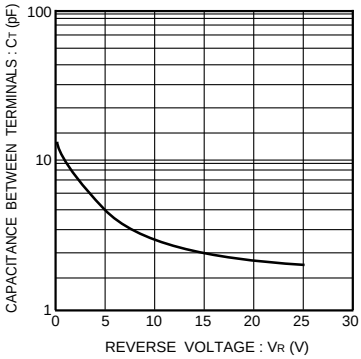


Fig. 3 Capacitance between terminals characteristics

Tr2

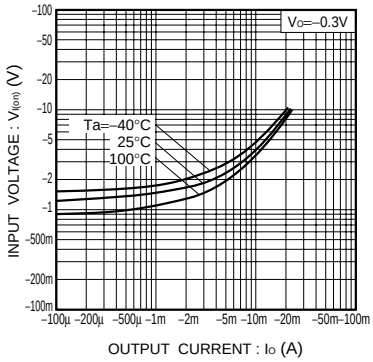


Fig.4 Input voltage vs. output current (ON characteristics)

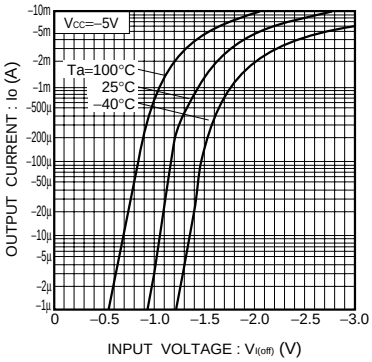


Fig.5 Output current vs. Input voltage (OFF characteristics)

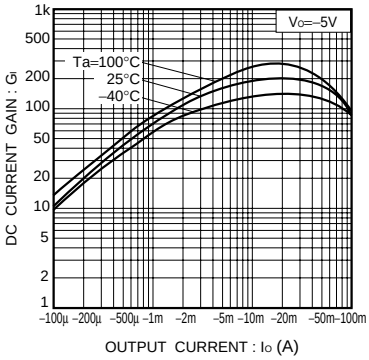


Fig.6 DC current gain vs. output current

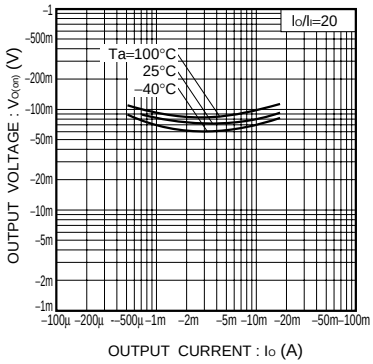


Fig.7 Output voltage vs. output current

Notes

- No technical content pages of this document may be reproduced in any form or transmitted by any means without prior permission of ROHM CO.,LTD.
- The contents described herein are subject to change without notice. The specifications for the product described in this document are for reference only. Upon actual use, therefore, please request that specifications to be separately delivered.
- Application circuit diagrams and circuit constants contained herein are shown as examples of standard use and operation. Please pay careful attention to the peripheral conditions when designing circuits and deciding upon circuit constants in the set.
- Any data, including, but not limited to application circuit diagrams information, described herein are intended only as illustrations of such devices and not as the specifications for such devices. ROHM CO.,LTD. disclaims any warranty that any use of such devices shall be free from infringement of any third party's intellectual property rights or other proprietary rights, and further, assumes no liability of whatsoever nature in the event of any such infringement, or arising from or connected with or related to the use of such devices.
- Upon the sale of any such devices, other than for buyer's right to use such devices itself, resell or otherwise dispose of the same, no express or implied right or license to practice or commercially exploit any intellectual property rights or other proprietary rights owned or controlled by
- ROHM CO., LTD. is granted to any such buyer.
- Products listed in this document are no antiradiation design.

The products listed in this document are designed to be used with ordinary electronic equipment or devices (such as audio visual equipment, office-automation equipment, communications devices, electrical appliances and electronic toys).
Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of with would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.

About Export Control Order in Japan

Products described herein are the objects of controlled goods in Annex 1 (Item 16) of Export Trade Control Order in Japan.
In case of export from Japan, please confirm if it applies to "objective" criteria or an "informed" (by MITI clause) on the basis of "catch all controls for Non-Proliferation of Weapons of Mass Destruction.