

# 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

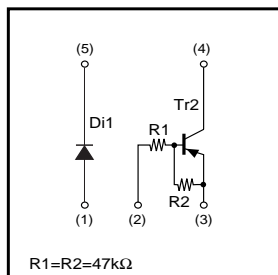
### ●Features

- 1) Tr : Digital Transistor  
Di : Low  $V_f$
- 2) Small package

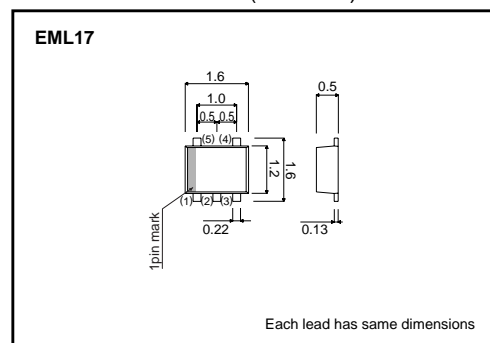
### ●Structure

Silicon epitaxial planar digital transistor  
Schottky barrier diode

### ●Equivalent circuit



### ●External dimensions (Unit : mm)



### ●Packaging specifications

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

## Transistors

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

Di1

Parameter	Symbol	Limits	Unit
DC current voltage	V <sub>R</sub>	30	V
Mean rectifying current	I <sub>O</sub>	100	mA
Forward peak surge current (60Hz·1cyc.)	I <sub>FSM</sub>	500	mA
Junction temperature	T <sub>J</sub>	125	°C
Storage temperature	T <sub>stg</sub>	-40 to +125	°C

\* 60Hz, 1 cycle

Tr2

Parameter	Symbol	Limits	Unit
Supply voltage	V <sub>CC</sub>	-50	V
Input voltage	V <sub>IN</sub>	-40 to +10	V
Output current	I <sub>O</sub>	-30	mA
	I <sub>C(MAX)</sub>	-100	
Power dissipation	P <sub>d</sub>	120	mW
Junction temperature	T <sub>J</sub>	150	°C

Di1, Tr2

Parameter	Symbol	Limits	Unit
Power dissipation	P <sub>d</sub>	150	mW *
Range of storage temperature	T <sub>stg</sub>	-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 <sub>F</sub>	-	-	0.45	V	I <sub>F</sub> =10mA
Reverse current	I <sub>R</sub>	-	-	0.5	μA	V <sub>R</sub> =10V

\* Please pay attention to static electricity when handling.

Tr2

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	V <sub>I(off)</sub>	-	-	-0.5	V	I <sub>C</sub> =-5V, I <sub>O</sub> =-100μA
	V <sub>I(on)</sub>	-3.0	-	-		V <sub>O</sub> =-0.3V, I <sub>O</sub> =-2mA
Output voltage	V <sub>O(on)</sub>	-	-0.1	-0.3	V	I <sub>O</sub> /I <sub>I</sub> =-10mA/-0.5mA
Input current	I <sub>I</sub>	-	-	-0.18	mA	V <sub>I</sub> =-5V
Output current	I <sub>O(off)</sub>	-	-	-0.5	μA	V <sub>CC</sub> =-50V, V <sub>I</sub> =0V
DC current gain	G <sub>1</sub>	68	-	-	-	V <sub>O</sub> =-5V, I <sub>O</sub> =-5mA
Input resistance	R <sub>1</sub>	32.9	47	61.1	kΩ	-
Resistance ratio	R <sub>2</sub> /R <sub>1</sub>	0.8	1	1.2	-	-
Transition frequency	f <sub>T</sub>	-	250	-	MHz	V <sub>CE</sub> =-10V, I <sub>E</sub> =5mA, f=100MHz *

\* Transition frequency of the device

Transistors

●Electrical characteristic curves

Di1

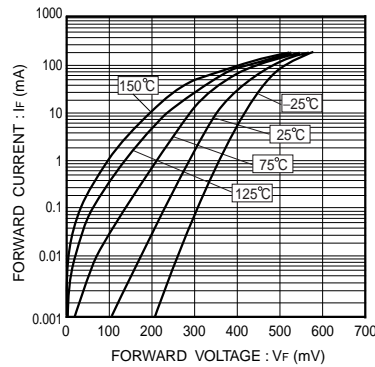


Fig.1 Forward characteristics

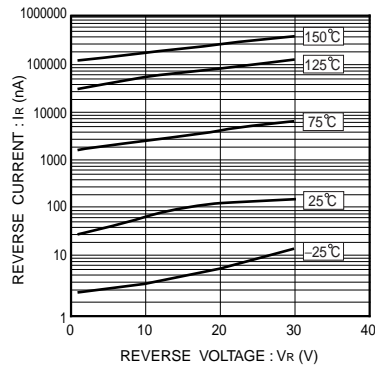


Fig.2 Reverse characteristics

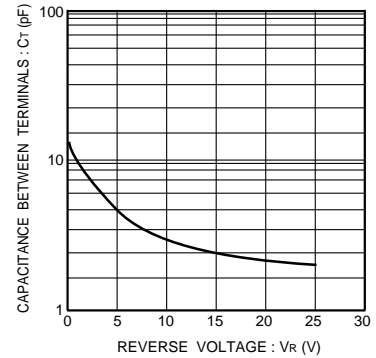


Fig.3 Capacitance between terminals characteristics

Tr2

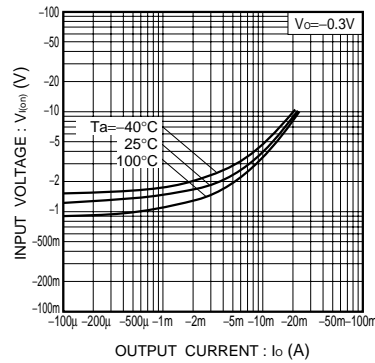


Fig.4 Input voltage vs. output current (ON characteristics)

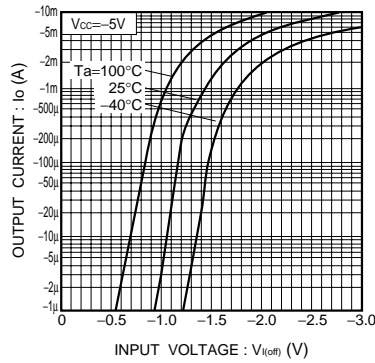


Fig.5 Output current vs. Input voltage (OFF characteristics)

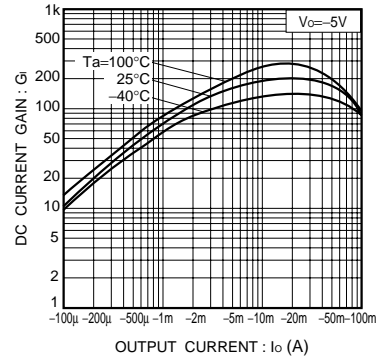


Fig.6 DC current gain vs. output current

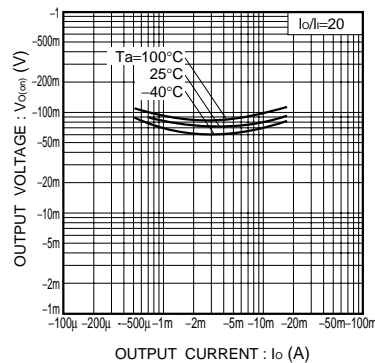


Fig.7 Output voltage vs. output current

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