General purpose transistor (isolated transistor and diode)

EML17

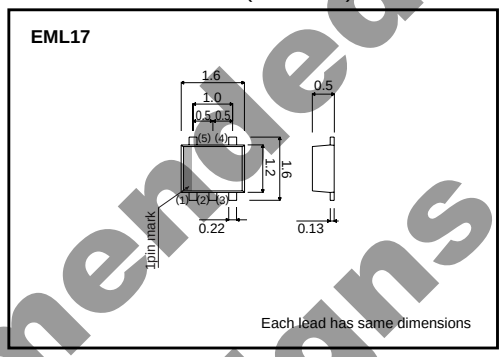
DTA144E and a RB520G-30 are housed independently in a EMT package.

●**Applications**
DC / DC converter
Motor driver

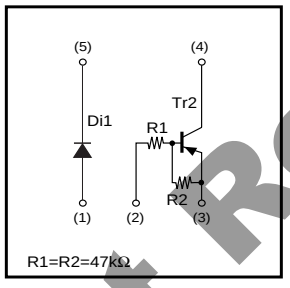
●**Features**
1) Tr : Degital Transistor
Di : Low V_F
2) Small package

●**Structure**
Silicon epitaxial planar degital transistor
Schottky barrier diode

●**External dimensions** (Unit : mm)



●**Equivalent circuit**



●**Packaging specifications**

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

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●**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

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●**Electrical characteristic curves**

Di1

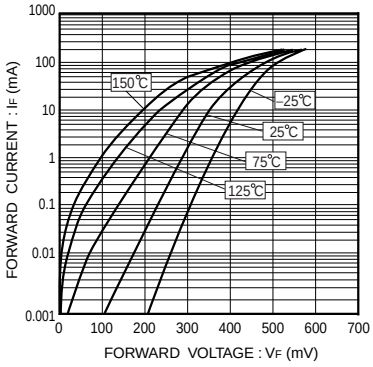

Fig.1 Forward characteristics

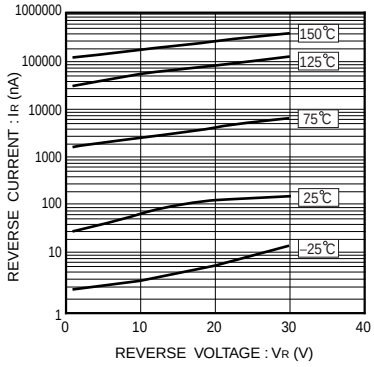

Fig.2 Reverse characteristics

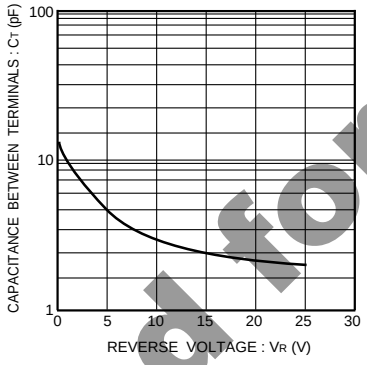

Fig. 3 Capacitance between terminals characteristics

Tr2

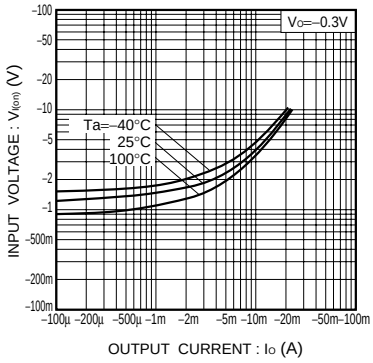

Fig.4 Input voltage vs. output current (ON characteristics)

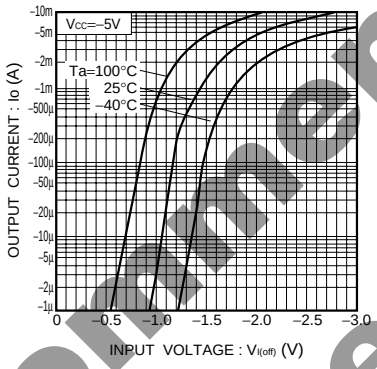

Fig.5 Output current vs. Input voltage (OFF characteristics)

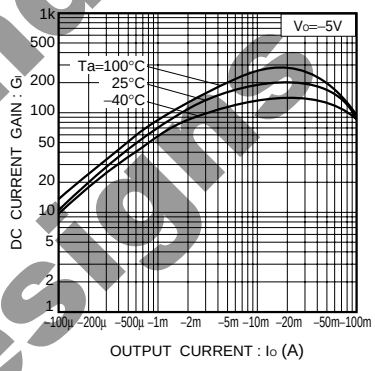

Fig.6 DC current gain vs. output current

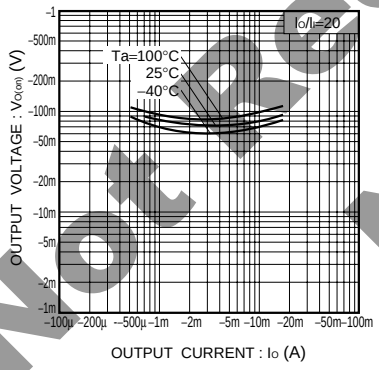

Fig.7 Output voltage vs. output current

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