# General purpose transistor (isolated transistor and diode)

# **EML20**

DTC123J

A and RB521S-30 are housed independently in a EMT6 package.

### Applications

DC / DC converter Motor driver

#### Features

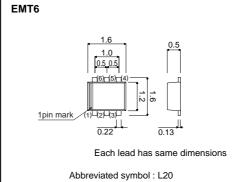
- 1) Tr: NPN digital transistor
  - Di: Low VF
- 2) Mounting possible with EMT3 automatic mounting machines.

#### Structure

NPN Silicon epitaxial planar digital transistor Schottky barrier diode

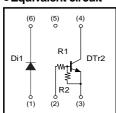
The following characteristics apply to both Di1 and DTr2.

ROHM: EMT6



●External dimensions (Unit: mm)

#### ●Equivalent circuit



R<sub>1</sub>=2.2k $\Omega$ , R<sub>2</sub>=47k $\Omega$ 

## Packaging specifications

Туре	EML20
Package	EMT6
Marking	L20
Code	T2R
Basic ordering unit (pieces)	8000

# ●Absolute maximum ratings (Ta=25°C)

Di1

Parameter	Symbol	Limits	Unit
Average revtified forward current	lo	200	mA
Forward current surge peak (60Hz, 1∞)	Iгsм	1	Α
Reverse voltage (DC)	VR	30	V
Junction temperature	Tj	125	°C

# DTr2

Parameter	Symbol	Limits	Unit	
Supply voltage	Vcc	50	V	
Input voltage	Vin	12	V	
Input voltage	VIN	-5		
Output ourrent	lo	100	mA	
Output current	Ic (MAX.)	100	mA	
Power dissipation	Pd	120	mW *	
Junction temperature	Tj	150	°C	

<sup>\*</sup> Each terminal mounted on a recommended.

### Di1/DTr2

Parameter	Symbol	Limits	Unit
Power dissipation	Pd	150	mW *
Storage temperature	Tstg	-55 to +125	°C

 $<sup>\*</sup>$  Each terminal mounted on a recommended.

# ●Electrical characteristics (Ta=25°C)

Di1

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
Forward voltage	VF	_	0.40	0.50	V	I=200mA
Reverse current	IR	_	4.0	30	μΑ	V <sub>R</sub> =10V

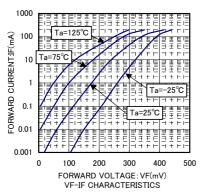
# DTr2

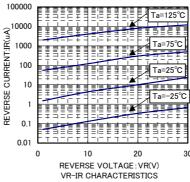
Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
land to the same	VI(off)	_	_	0.5	V	Vcc=5V / Io=100uA
Input voltage	VI(on)	1.1	_	_	V	Vo=0.3V / Io=5mA
Output voltage	Vo(on)	_	100	300	mV	lo=5mA, l≔0.25mA
Input current	II	_	_	3.6	mA	Vi=5V
Output current	IO(off)	_	_	500	nA	Vcc=50V / V⊫0V
DC current gain	Gı	80	_	_	-	Vo=5V / Io=10mA
Transition frequency	: f⊤	_	250	_	MHz	Vce=10V / Ie= -5mA, f=100MHz
Input resistance	R <sub>1</sub>	1.54	2.2	2.86	kΩ	-
Resistance ratio	R2/R1	17	21	26	-	_

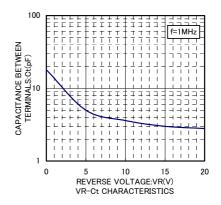
<sup>\*</sup> Characteristics of built-in transistor.

#### •Electrical characteristic curves

Di1







### DTr2

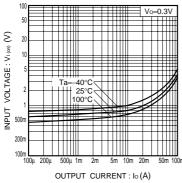


Fig.1 Input voltage vs. output current (ON characteristics)

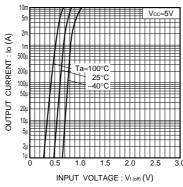


Fig.2 Output current vs. input voltage (OFF characteristics)

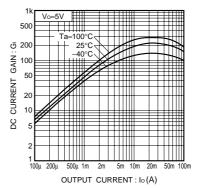


Fig.3 DC current gain vs. output current

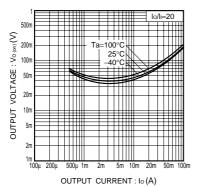


Fig.4 Output voltage vs. output current

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