

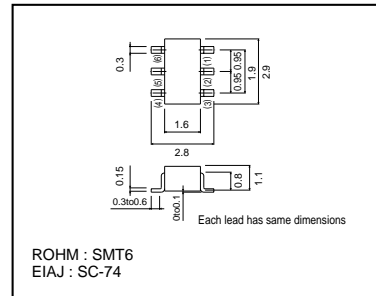
Power management (dual digital transistors)

IMD16A

●Features

- 1) Two digital class transistors in a SMT package.
- 2) Up to 500mA can be driven.
- 3) Low $V_{CE(sat)}$ of drive transistors for low power dissipation.

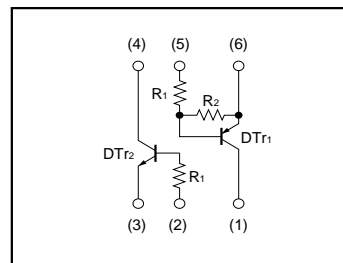
●External dimensions (Units : mm)



●Package, marking, and packaging specifications

Part No.	IMD16A
Package	SMT6
Marking	D16
Code	T108
Basic ordering unit (pieces)	3000

●Equivalent circuit



●Absolute maximum ratings (Ta=25°C)

DTr1 (PNP)

Parameter	Symbol	Limits	Unit
Supply voltage	V_{CC}	-50	V
Input voltage	V_{IN}	-12	V
		5	
Output current	I_C	-500	mA

DTr2 (NPN)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	50	V
Collector-emitter voltage	V_{CEO}	50	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	100	mA

Total

Parameter	Symbol	Limits	Unit
Collector power dissipation	P_d	300(TOTAL)	mW *
Junction temperature	T_J	150	°C
Storage temperature	T_{stg}	-55 ~ +150	°C

* 200mW per element must not be exceeded.

Transistors

● Electrical characteristics (Ta=25°C)

DTr1

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	V _{I(off)}	–	–	–0.3	V	V _{CC} =–5V, I _O =–100μA
	V _{I(on)}	–2	–	–		V _O =–0.3V, I _O =–20mA
Output voltage	V _{O(on)}	–	–	–0.3	V	I _O /I _E =–50mA / –2.5mA
Input current	I _I	–	–	–3	mA	V _I =–5V
Output current	I _{O(off)}	–	–	–0.5	μA	V _{CC} =–50V, V _I =0V
DC current gain	G _I	82	–	–	–	I _O =–50mA, V _O =–5V *1
Transition frequency	f _T	–	250	–	MHz	V _{CE} =–10V, I _E =50mA, f=100MHz *2
Input resistance	R ₁	1.54	2.2	2.86	kΩ	–
Resistance ratio	R ₂ / R ₁	0.8	1	1.2	–	–

*1 Measured using pulse current. *2 Transition frequency of mounted transistor.

DTr2

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV _{CBO}	50	–	–	V	I _C =50μA
Collector-emitter breakdown voltage	BV _{CEO}	50	–	–	V	I _C =1mA
Emitter-base breakdown voltage	BV _{EBO}	5	–	–	V	I _E =50μA
Collector cutoff current	I _{CBO}	–	–	0.5	μA	V _{CB} =50V
Emitter cutoff current	I _{EBO}	–	–	0.5	μA	V _{EB} =4V
Collector-emitter saturation voltage	V _{CE(sat)}	–	–	0.3	V	I _C /I _E =1mA/0.1mA
DC current transfer ratio	h _{FE}	100	250	600	–	V _{CE} =5V, I _C =1mA
Transition frequency	f _T	–	250	–	MHz	V _{CE} =10V, I _E =–5mA, f=100MHz *
Input resistance	R ₁	70	100	130	kΩ	–

*Transition frequency of mounted transistor.