NXP 500 mA resistor-equipped transistors (RETs) PDTD and PDTB series

500 mA RETs for Automotive applications

Developed specifically for the automotive and industrial market, 500 mA RETs combine one or two resistors with a transistor to provide an optimal integrated solution for digital applications.

Key features

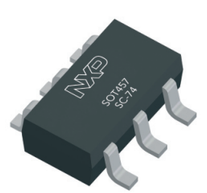
- Built-in bias resistors
- 500 mA collector current capability
- ± 10 % resistor tolerance
- 5 different resistor combinations (more on request)
- double versions in SOT457 (SC-74) on request

Key benefits

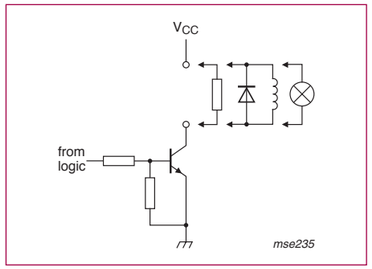
- lower handling and inventory costs
- reduced boardspace
- shorter assembly times
- reduced pick-and-place efforts
- simpler design process
- increased end product reliability due to fewer soldering points

Key applications

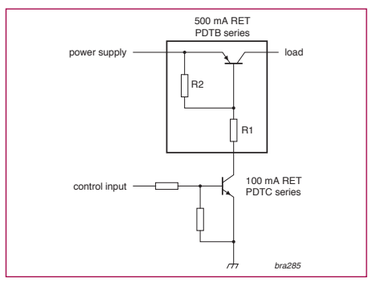
- digital applications in automotive and industrial segments
- switching loads
- controlling IC inputs
- cost saving alternative for BC807/BC817 and their base resistors in digital applications



Application examples



RETs to switch loads up to 500 mA



Loadswitch using a 500 mA PNP RET

NXP founded by Philips

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founded by PHILIPS

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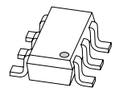
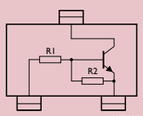
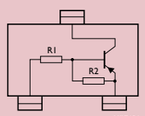
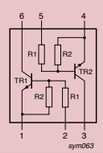


Types and parametric data

Package					SOT23		SOT457 (SC-74)
Size (mm)					2.9 x 1.3 x 1.0		2.9 x 1.5 x 1.0
P_{tot} (mW)					250		290
Polarity					NPN	PNP	Double NPN
I_C (mA)	V_{CEO} (V)		R1 (kΩ)	R2 (kΩ)			
500	50	R1 = R2	1.0	1.0	PDTD113ET	PDTB113ET	
			2.2	2.2	PDTD123ET	PDTB123ET	
		R1 ≠ R2	1.0	10	**PDTD113ZT**	**PDTB113ZT**	PIMN31
			2.2	10	PDTD123YT	PDTB123YT	
		only R1	2.2	-	**PDTD123TT**	**PDTB123TT**	

Types in **bold:** samples included

Cross reference list

Device	NXP replacement
BCR503	PDTD123ET
PCR521	PDTD113ET
BCR523	PDTD113ZT
BCR523U	PIMN31
BRC553	PDTB123ET
BCR571	PDTB113ET
BCR573	PDTB113ZT
BCR505	PDTD123YT

Device	NXP replacement
DDTB113EC	PDTB113ET
DDTB113ZC	PDTB113ZT
DDTB123EC	PDTB123ET
DDTB123TC	PDTB123TT
DDTB123YC	PDTB123YT
DDTD113EC	PDTD113ET
DDTD113ZC	PDTD113ZT
DDTC123EC	PDTD123ET
DDTC123TC	PDTD123TT
DDTC123YC	PDTD123YT

Device	NXP replacement
KRC241S	PBRN113ET
KRA221S	PBRP113ET
KRC245S	PBRN113ZT
KRA225S	PBRP113ZT
KRC242S	PBRN123ET
KRA222S	PBRP123ET
KRC246S	PBRN123YT
KRA226S	PBRP123YT

PDTD113ZT

R1 = 1, R2 = 10; NPN

PDTB113ZT

R1 = 1, R2 = 10; PNP

PDTD123TT

R1 = 2.2; NPN

PDTB123TT

R1 = 2.2; PNP

PIMN31

R1 = 1, R2 = 10; double NPN