NXP 800 mA low V_{CEsat} (BISS) RETs PBRN and PBRP series

Low V_{CEsat} (BISS) RETs optimized for automotive and industrial applications

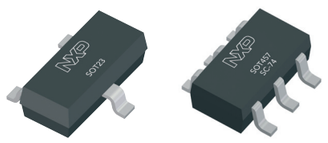
Developed specifically for the automotive and industrial markets, these 800 mA resistor-equipped transistors (RETs) combine one or two resistors with a low V_{CEsat} (BISS) transistor to provide an optimal, integrated solution for digital applications.

Key features

- Built-in bias resistors
- High current gain h_{FE}
- 800 mA repetitive peak output current
- Low collector-emitter saturation voltage V_{CEsat}
- ±10% resistor tolerance
- Four resistor combinations (more on request)

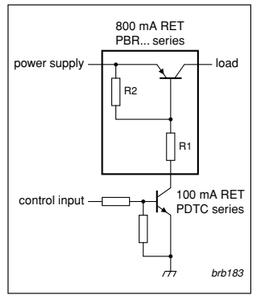
Key benefits

- Lower handling and inventory costs
- Reduced board space
- Shorter assembly times
- Reduced pick-and-place efforts
- Simpler design process
- Increased reliability of end product due to fewer soldering points

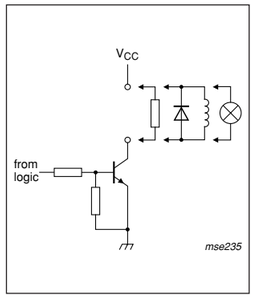


Applications

- Digital applications in automotive and industrial segments
- Switching loads
- Controlling IC inputs
- Medium-current peripheral drivers



RET combination to build an 800 mA loadswitch



RETs to switch loads up to 800 mA

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founded by PHILIPS

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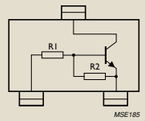
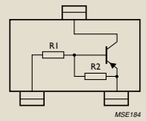
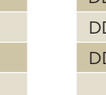
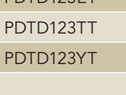
800 / 600 mA low V_{CEsat} RETs

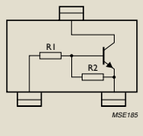
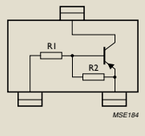
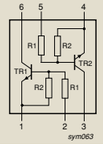
Package				SOT23			
Size (mm)				2.9 x 1.3 x 1.0			
P_{tot} (mW)				250			
Polarity				NPN		PNP	
I_{ORM} (mA)	I_O (mA)	V_{CEO} (V)		R1 (kΩ)	R2 (kΩ)		
800	600	40	R1 = R2	1.0	1.0	**PBRN113ET**	**PBRP113ET**
				2.2	2.2	**PBRN123ET**	**PBRP123ET**
			R1 ≠ R2	1.0	10	**PBRN113ZT**	**PBRP113ZT**
				2.2	10	**PBRN123YT**	**PBRP123YT**

bold types are included as samples

500 mA resistor-equipped transistors (RETs)





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		420
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	

Cross reference list

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

Device	NXP replacement
BCR503	PDTD123ET
BCR505	PDTD123YT
PCR521	PDTD113ET
BCR523	PDTD113ZT
BRC553	PDTB123ET
BCR571	PDTB113ET
BCR573	PDTB113ZT
DDTB113EC	PDTB113ET
DDTB113ZC	PDTB113ZT

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

NXP
PBRN113ET
R1 = 1, R2 = 1; NPN

NXP
PBRP113ET
R1 = 1, R2 = 1; PNP

NXP
PBRN123ET
R1 = 2.2, R2 = 2.2; NPN

NXP
PBRP123ET
R1 = 2.2, R2 = 2.2.; PNP

NXP
PBRN113ZT
R1 = 1, R2 = 10; NPN

NXP
PBRP113ZT
R1 = 1, R2 = 10; PNP

NXP
PBRN123YT
R1 = 2.2, R2 = 10; NPN

NXP
PBRP123YT
R1 = 2.2, R2 = 10; PNP