

5 é / Descriptions

9 5: .> // x J' 6 4 6 f â'ož Silicon PNP Digital transistor in a SOT-23 Plastic Package.

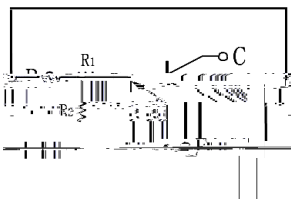
□^a / Features

Ä x ž â Š k• ç è — < k × 5 « ^ y ò - v i k ... ` ' +) 7 ö Õ ä U ´ Å } L k —) í D } ož
With built-in bias resistors, simplify circuit design, reduce a quantity of parts and manufacturing process, high current, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

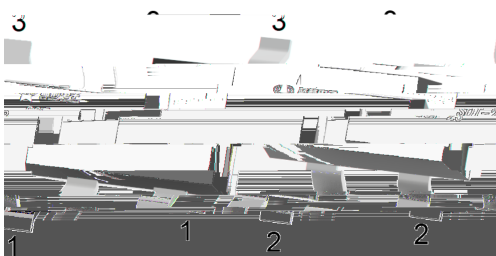
Đ ÷ / Applications

9 • ¼ 0 • F, è 0 • μ è Y C Ü è k á V ñ • } Lož
Switching, inverter circuit, interface circuit and driver circuit applications, Meet the stringent requirements of automotive applications.

Ã W] Ô • / Equivalent Circuit



• Ô - æ / Pinning



PIN 1 y Base PIN 2 y Emitter PIN 3 y Collector

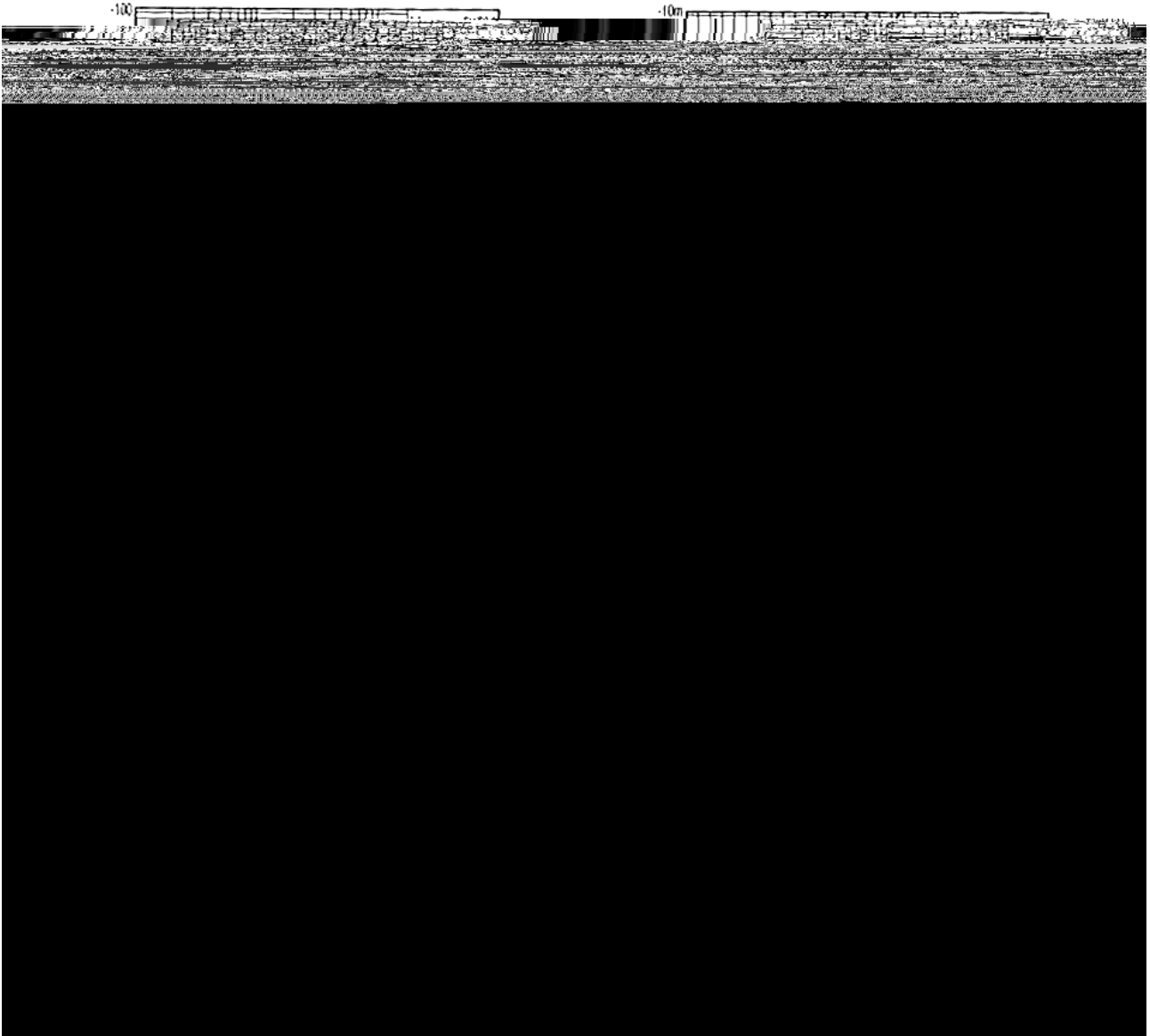
Z Ü B , M V / h_{FE} Classifications & Marking

Marking	Q13
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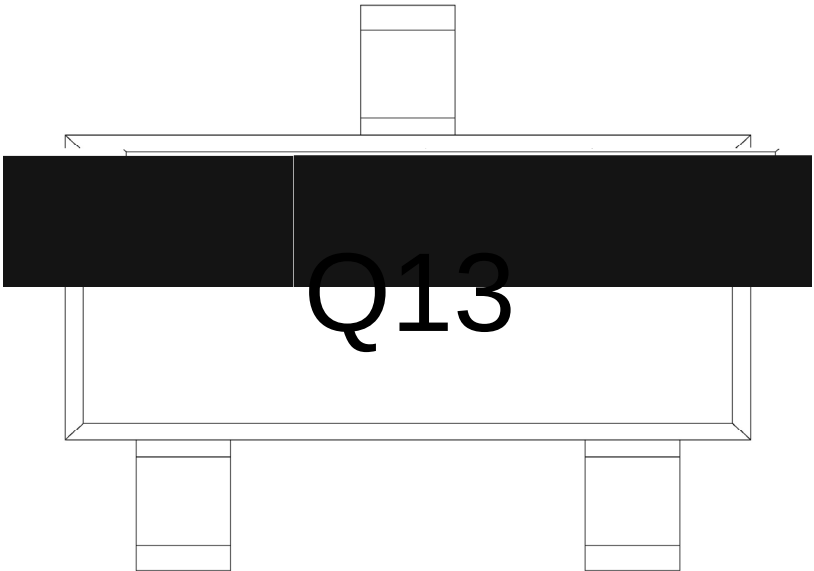
@ f Parameter	... Z Symbol	f > Rating	% y Unit
Output Voltage	V _{CC}	-50	V
Input Voltage	V _{IN}	-30	V
		10	V
Output Current	I _O	-100	mA
	I _{C(MAX)}	-100	mA
Power Dissipation	P _d	200	mW
Junction Temperature	T _j	150	
Storage Temperature Range	T _{stg}	-55 150	

@ f Parameter	... Z Symbol	y j Ú ^ Test Conditions	Â 4 > Min	Á ° > Typ	Â Ý > Max	% y Unit
Input Voltage	V _{I(off)}	V _{CC} =-5.0V I _O =-100 A			-0.5	V
	V _{I(on)}	V _O =-0.3V I _O =-20mA	-3.0			V
Output Voltage	V _{O(on)}	I _O =-10mA I _I =-0.5mA		-0.1	-0.3	V
Input Current	I _I	V _I =-5.0V			-1.8	mA
Output Cut-off Current	I _{O(off)}	V _{CC} =-50V V _I =0V			-0.5	A
DC Current Gain	G _I	V _O =-5.0V I _O =-10mA	20			
Transition Frequency	f _T	V _{CE} =-10V I _E				

Ó ? d • Ž ¢ / Electrical Characteristic Curve



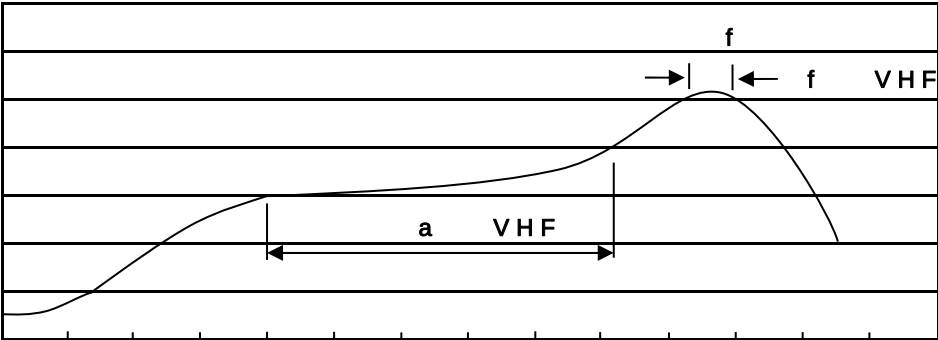
, M y f / Marking Instructions



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7 y V ñ —)í D } ö œ
13 y ° Z W A
Note:
Q: Automobile halogen-free product Code
13 y Product Type Code

šWD t...•Žč (x/) / :KSVKXGZ[XK 6XULORK LUX /8 8KLRU] 9URJKXOTM 6

7HPSHUDDWXXUH



7LPH VHF

ačy

Note:

- 1o•Ä½“† 150½200 - kž• 60½120sec;

2o•Q>“† 255 r5 - kž•4 Ò 5 r0.5sec;

3o•D N ò i Ò 0 ,† 2½10 - /sec.
- 1.Preheating:150~200 - , Time:60~120sec.

2.Peak Temp.:255 r5 - , Duration:5 r0.5sec.

3.Cooling Speed: 2~10 - /sec.

ÂD /Că p - »] / Resistance to Soldering Heat Test Conditions

“†y 260 r5 - ž•y 10 r1 sec. Temp.:260±5 Time:10±1 sec

G P á / Packaging SPEC.

2 & x / REEL

Package Type 7>û~E	Units ;>û!H					Dimension ;>û p . (unit /mm³)		
	Units/Reel /-	Reels/Inner Box -- /-	Units/Inner Box /-	Inner Boxes/Outer Box - /1ç	Units/Outer Box /1ç	Reel	Inner Box	Outer Boxç
SOT-23	3,000	10	30,000	6	180,000	7 s ×8	180×120×180	390×385×205

„Đ y f / Notices