

TIP31

Rev. H Oct.-2018

WR0553

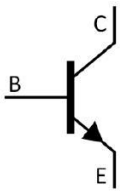
QSQ

Silicon NPN transistor in a TO-220 Plastic Package.

WLS65

Complement to TIP32.

Medium power linear switching applications.



PIN1 Base

PIN 2 Collector

PIN 3 Emitter

/ h_{FE} Classifications & Marking

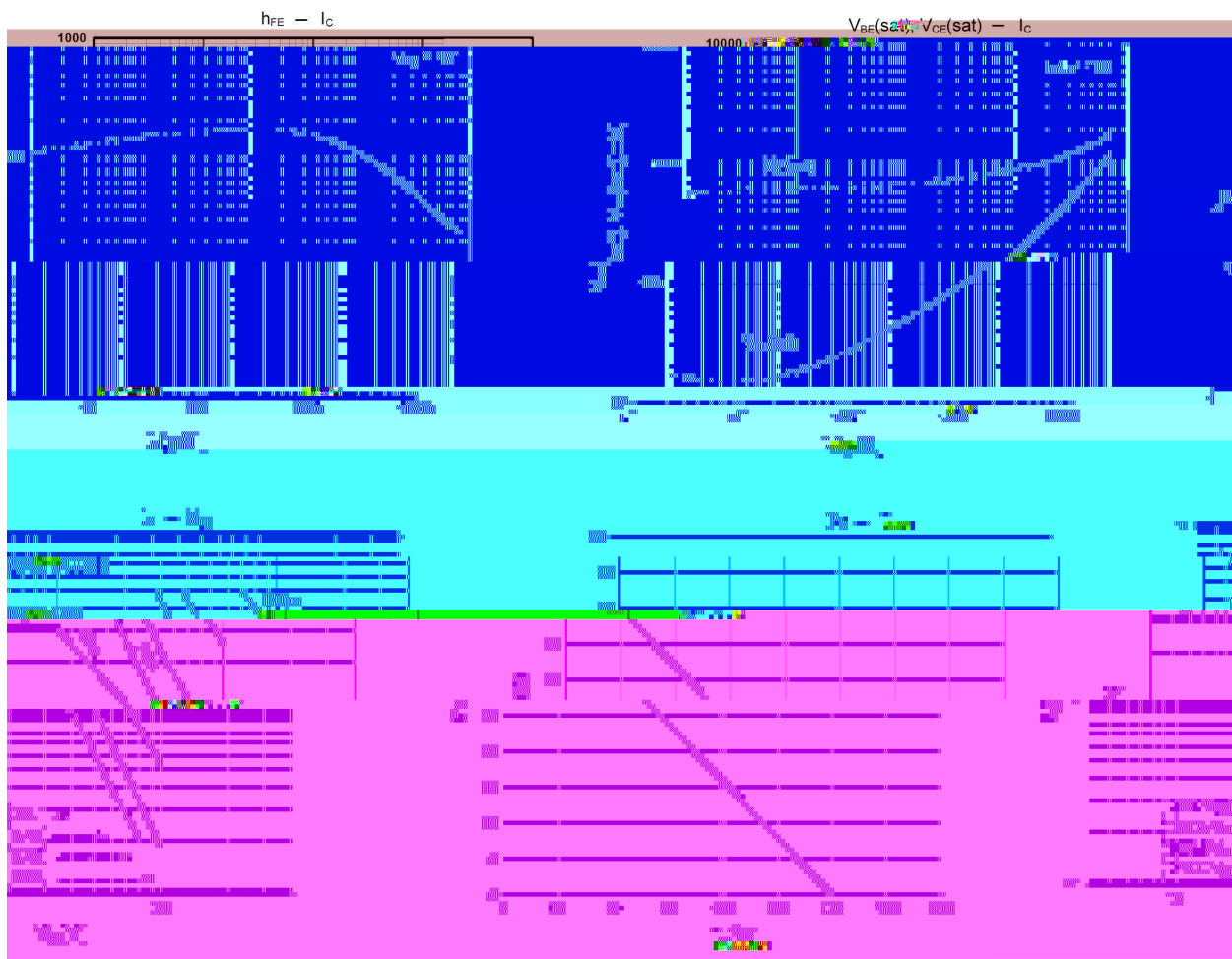
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating				Unit
		TIP31	TIP31A	TIP31B	TIP31C	
Collector to Base Voltage	V_{CBO}	40	60	80	100	V
Collector to Emitter Voltage	V_{CEO}	40	60	80	100	V
Emitter to Base Voltage	V_{EBO}	5.0				V
Collector Current - Continuous	I_C	3.0				A
Peak Collector Current	I_{CP}	5.0				A
Base Current - Continuous	I_B	1.0				A
Collector Power Dissipation	P_C	2.0				W
Collector Power Dissipation	$P_C(T_c=25)$	40				W
Junction Temperature	T_j	150				
Storage Temperature Range	T_{sag}	-55 150				

/ Electrical Characteristics(Ta=25)

Parameter	Symbol		Test Conditions	Min	Typ	Max	Unit
Collector to Emitter Breakdown Voltage	V_{CEO}	TIP31	$I_C=30mA$ $I_B=0$	40			V
		TIP31A		60			
		TIP31B		80			
		TIP31C		100			
Collector Cut-Off Current	I_{CEO}	TIP31 TIP31A	$V_{CE}=30V$ $I_B=0$			0.3	mA
		TIP31B TIP31C	$V_{CE}=60V$ $I_B=0$			0.3	
Collector Cut-Off Current	I_{CES}	TIP31	$V_{CE}=40V$ $V_{EB}=0$			200	μA
		TIP31A	$V_{CE}=60V$ $V_{EB}=0$			200	
		TIP31B	$V_{CE}=80V$ $V_{EB}=0$			200	
		TIP31C	$V_{CE}=100V$ $V_{EB}=0$			200	
Emitter Cut-Off Current	I_{EBO}		$V_{EB}=5.0V$ $I_C=0$			1.0	mA
DC Current Gain	$h_{FE(1)}$		$V_{CE}=4.0V$ $I_C=3.0A$	10		70	
	$h_{FE(2)}$		$V_{CE}=4.0V$ $I_C=1.0A$	25			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$		$I_C=3.0A$ $I_B=375mA$			1.2	V
Base to Emitter Voltage	V_{BE}		$I_C=3.0A$ $V_{CE}=4.0V$			1.8	V
Transition Frequency	f_T		$V_{CE}=10V$ $I_C=500mA$	3.0			MHz

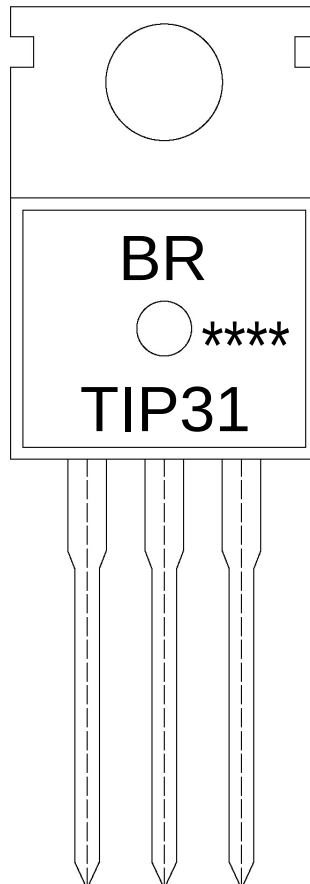
/ Electrical Characteristic Curve



TIP31

Rev. H Oct.-2018

/ Marking Instructions



BR

TIP31

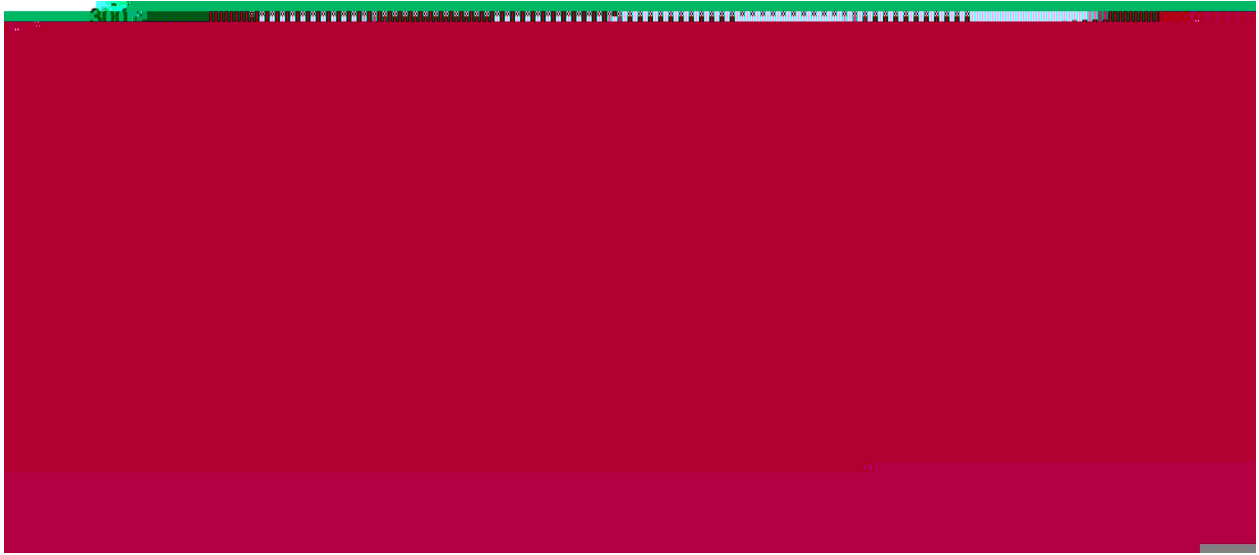
Note:

BR: Company Code

TIP31: Product Type.

****: Lot No. Code, code change with Lot No.

() / Temperature Profile for Dip Soldering(Pb-Free)



Note:

- | | | | | | |
|---|-----|------|----|----------|---|
| 1 | 25 | 150% | 60 | 90sec; | 1.Preheating:25~150%, Time:60~90sec. |
| 2 | 255 | ±5% | 5 | ±0.5sec; | 2.Peak Temp.:255 ±5%, Duration:5 ±0.5sec. |
| 3 | | | 2 | 10%/sec. | 3. Cooling Speed: 2~10%/sec. |

/ Resistance to Soldering Heat Test Conditions

270 ±5% 10 ±1 sec. Temp.:270±5 Time:10±1 sec

/ Packaging SPEC.

/ BULK

Package Type	Units					Dimension (unit mm ³)		
	Units/Bag /	Bags/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Bag	Inner Box	Outer Box
TO-220/F	200	10	2,000	5	10,000	135×190	237×172×102	560×245×195

/ TUBE

Package Type	Units					Dimension (unit mm ³)		
	Units/Tube /	Tubes/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Tube	Inner Box	Outer Box
TO-220/F	50	20	1,000	5	5,000	532×31.4×5.5	555×164×50	575×290×180

/ Notices