

# silicon power transistors



## NPN TO-63 (cont'd)

$I_{C(MAX)} = 10 \text{ to } 30\text{A}$

$V_{CE(SUS)} = 60 \text{ to } 350\text{V}$

$f_r = 0.6 \text{ to } 30 \text{ MHz}$

Type #	$V_{CE(SUS)}$ (Volts)	$h_{FE}$ @ $I_C/V_{CE}$ (Min-Max @ A/V)	$V_{CE(SAT)}$ @ $I_C/I_B$ (V @ A/A)	$V_{BE}$ @ $I_C/V_{CE}$ (V @ A/V)	$I_{CEV}$ @ $V_{CE}$ (mA @ V)	$P_D$ @ $T_C = 100^\circ\text{C}$ (Watts)	$\theta_{JC}$ ( $^\circ\text{C/W}$ )	$I_{S/B}$ @ $V_{CE}$ $t = 1\text{sec}$ (A @ V)	$f_r$ (MHz)	$t_{ON}$ @ $I_C/I_B$ ( $\mu\text{s}$ @ A/A)	$t_{OFF}$ @ $I_C/I_B$ ( $\mu\text{s}$ @ A/A)	Generic Product	General Information
STA6046	60	20-100@20/4	2@20/1.33	2 <sup>3</sup> @20/1.33	5@70	114	.875	5.2@22	30	.6@20/1.33	9@20/1.33	STA6046 Family. 250 x 250 Mil Chip. Double Epitaxial Process. Ultrasonically Bonded Leads. Case 531	High Current, High Speed Power Switch and Amplifier. Military Usage.
STA6047	100	20-100@20/4	2@20/1.33	2 <sup>3</sup> @20/1.33	5@110	114	.875	5.2@22	30	.6@20/1.33	9@20/1.33		
STA6048	140	20-100@20/4	2@20/1.33	2 <sup>3</sup> @20/1.33	5@150	114	.875	5.2@22	30	.6@20/1.33	9@20/1.33		
<b>Typical Values</b>	<b>110</b>	<b>20-200@20/4</b>	<b>1@20/1.33</b>	<b>1.8<sup>3</sup>@20/1.33</b>	<b>1@110</b>	<b>114</b>	<b>.875</b>	<b>5.2@22</b>	<b>30</b>	<b>.5@20/1.33</b>	<b>.8@20/1.33</b>		
NOTE: This product is developmental.													
STA9860	225	10-200@10/4	2@10/1	2.5@10/4	5@225	100	1.0	5@20	20	.6@10/1	3@10/1	STA9860 Family. 200 x 200 Mil Chip. Double Epitaxial Process. Ultrasonically Bonded Leads. Case 531	High Voltage, High Speed Power Switch and Amplifier. Military Usage.
STA9861	300	10-200@8/4	2@8/8	2.5@8/4	1.0@300	100	1.0	5@20	20	.6@8/8	3@8/8		
STA9862	350	10-200@5/4	2@5/5	2.5@5/4	1.0@350	100	1.0	5@20	20	.5@5/5	3@5/5		
STA9863	225	10-200@5/4	2@5/5	2.5@5/4	5@225	100	1.0	5@20	20	.5@5/5	3@5/5		
STA9864	300	10-200@5/4	2@5/5	2.5@5/4	1.0@300	100	1.0	5@20	20	.5@5/5	3@5/5		
<b>Typical Values</b>	<b>275</b>	<b>10-200@5/4</b>	<b>1@5/5</b>	<b>1.8@5/4</b>	<b>1@275</b>	<b>100</b>	<b>1.0</b>	<b>5@20</b>	<b>20</b>	<b>.5@5/5</b>	<b>2.5@5/5</b>		
NOTE: This product is developmental.													
STA9870	225	10-200@20/4	2@20/2	2.5@20/4	5@225	114	.875	2.5@22	20	.6@20/2	3@20/2	STA9870 Family. 250 x 250 Mil Chip. Double Epitaxial Process. Ultrasonically Bonded Leads. Case 531	High Voltage, High Current, High Speed Power Switch and Amplifier. Military Usage.
STA9871	300	10-200@15/4	2@15/1.5	2.5@15/4	1.0@300	114	.875	5.2@22	20	.6@15/1.5	3@15/1.5		
STA9872	350	10-200@12/4	2@12/1.2	2.5@12/4	1.0@350	114	.875	5.2@22	20	.5@12/1.2	3@12/1.2		
<b>Typical Values</b>	<b>250</b>	<b>10-200@12/4</b>	<b>1@12/1.2</b>	<b>1.8<sup>3</sup>@12/1.2</b>	<b>1@250</b>	<b>114</b>	<b>.875</b>	<b>5.2@22</b>	<b>20</b>	<b>.5@12/1.2</b>	<b>2.5@12/1.2</b>		
NOTE: This product is developmental.													

NOTES:  
<sup>3</sup>  $V_{BE(SAT)}$  @  $I_C/I_B$  (V @ A/A)

Datasheet Directory

## NPN TO-114



$I_{C(MAX)} = 70\text{A}$

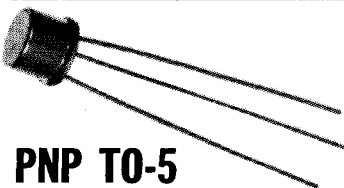
$V_{CE(SUS)} = 80 \text{ to } 150\text{V}$

$f_r = 0.1 \text{ MHz}$

Type #	$V_{CE(SUS)}$ (Volts)	$h_{FE}$ @ $I_C/V_{CE}$ (Min-Max @ A/V)	$V_{CE(SAT)}$ @ $I_C/I_B$ (V @ A/A)	$V_{BE}$ @ $I_C/V_{CE}$ (V @ A/V)	$I_{CEV}$ @ $V_{CE}$ (mA @ V)	$P_D$ @ $T_C = 100^\circ\text{C}$ (Watts)	$\theta_{JC}$ ( $^\circ\text{C/W}$ )	$I_{S/B}$ @ $V_{CE}$ $t = 1\text{sec}$ (A @ V)	$f_r$ (MHz)	$t_{ON}$ @ $I_C/I_B$ ( $\mu\text{s}$ @ A/A)	$t_{OFF}$ @ $I_C/I_B$ ( $\mu\text{s}$ @ A/A)	Generic Product	General Information
2N3149	80	>10@50/3	1.5@50/10	2.5 <sup>3</sup> @50/10	2@80	200	0.5		0.1	10@50/10	20@50/10	2N3149 Family. 476 Mil Diameter Chip. Single Diffused Process. Clip Leads. Case 600	High Current, High Power Amplifier and Switch. Military Usage.
2N3150	100	>10@50/3	1.5@50/10	2.5 <sup>3</sup> @50/10	2@100	200	0.5		0.1	10@50/10	20@50/10		
2N3151	150	>10@50/3	1.5@50/10	2.5 <sup>3</sup> @50/10	2@150	200	0.5		0.1	10@50/10	20@50/10		
<b>Typical Values</b>	<b>110</b>	<b>8-60@50/3</b>	<b>1.2@50/10</b>	<b>2<sup>3</sup>@50/10</b>	<b>1@110</b>	<b>200</b>	<b>0.5</b>	<b>4@50</b>	<b>0.5</b>	<b>9@50/10</b>	<b>17@50/10</b>		

<sup>3</sup>  $V_{BE(SAT)}$  @  $I_C/I_B$  (V @ A/A)

# germanium power transistors



## PNP TO-5

$I_{C(MAX)} = 3\text{A}$

$V_{CE(SUS)} = 30 \text{ to } 60\text{V}$

Type #	$V_{CE(SUS)}$ (Volts)	$V_{EBO}$ (Volts)	$h_{FE}$ @ $I_C/V_{CE}$ (Min-Max @ A/V)	$V_{CE(SAT)}$ @ $I_C/I_B$ (V @ A/A)	$V_{BE}$ @ $I_C/V_{CE}$ (V @ A/V)	$I_{CEV}$ @ $V_{CE}$ (mA @ V)	$P_D$ @ $T_C = 25^\circ\text{C}$ (Watts)	$\theta_{JC}$ ( $^\circ\text{C/W}$ )	$T_{J(MAX)}$ ( $^\circ\text{C}$ )	$f_r$ (KHz)	Generic Product	General Information
2N1038	30	20	20-60@1/5	.25@1/1	1@1/5	.65@40	20	3.75	100	225	2N1038 Family. 3 Amp PNP Germanium Alloy Power Transistors. Case 102	General Purpose Power Switch and Amplifier. Consumer, Industrial, and Military Usage.
2N1039	40	20	20-60@1/5	.25@1/1	1@1/5	.65@60	20	3.75	100	225		
2N1040	50	20	20-60@1/5	.25@1/1	1@1/5	.65@80	20	3.75	100	225		
2N1041	60	20	20-60@1/5	.25@1/1	1@1/5	.65@100	20	3.75	100	225		
2N2564	30	20	20-60@3/1	.75@3/3	1.5@3/1	.65@40	20	3.75	100	250		
2N2565	40	20	20-60@3/1	.75@3/3	1.5@3/1	.65@60	20	3.75	100	250		
2N2566	50	20	20-60@3/1	.75@3/3	1.5@3/1	.65@80	20	3.75	100	250		
2N2567	60	20	20-60@3/1	.75@3/3	1.5@3/1	.65@100	20	3.75	100	250		
2N2659	30	20	30-90@5/5	.2@5/05	.6@5/5	.6@50	15	5.0	100	280		
2N2660	40	20	30-90@5/5	.2@5/05	.6@5/5	.6@70	15	5.0	100	280		
2N2661	50	20	30-90@5/5	.2@5/05	.6@5/5	.6@90	15	5.0	100	280		
2N2665	30	20	50-150@5/5	.25@5/025	.6@5/5	.6@50	15	5.0	100	300		
2N2666	40	20	50-150@5/5	.25@5/025	.6@5/5	.6@70	15	5.0	100	300		
2N2667	50	20	50-150@5/5	.25@5/025	.6@5/5	.6@90	15	5.0	100	300		