

Applications	Type No		Maximum Ratings			Electrical Characteristics (Ta=25°C)												Package			
			V _{CEO} (V)	I _C (mA)	P _C (mW)	h _{FE}	(MIN)		MAX		f _T (MHz)	(TYP) MIN		NF (dB)	MAX					Fig	
	V _{CE} (V)	I _C (mA)					V _{CE} (V)	I _B (mA)	V _{CE} (V)	I _C (mA)		V _{CE} (V)	I _E (mA)		f (MHz)	R _B (Ω)					
	NPN	PNP																			
FM/RF, MIX OSC	2SC3880S	—	30	20	100	40~200	6	1	—	—	—	(550)	6	1	5.0	6	-1	100	50	SOT-23	F1
	2SC3195	—	30	20	100	40~200	6	1	—	—	—	(550)	6	1	5.0	6	-1	100	50	TO-92(M)	F5
	2SC3194	—	30	20	100	25~140	6	1	—	—	—	(600)	6	*-1	4.0	6	-1	100	50	TO-92(C)	F3
FM/RF, MIX OSC	KTC9016	—	30	20	200	40~198	5	1	—	—	—	260	6	*-1	4.0	6	-1	100	50	TO-92(B)	F3
	KTC9018	—	30	20	200	40~198	5	1	—	—	—	500	10	*-8	4.0	6	-1	100	50	TO-92(B)	F3
FM/RF, MIX OSC	BF599	—	25	25	200	(40)	10	7	—	—	—	275	10	7	—	—	—	—	—	SOT-23	F1
	BF520	—	25	25	200	(40)	10	7	—	—	—	275	10	7	—	—	—	—	—	SOT-23	F1
FM-IF/AF-IF	2SC3879S	—	30	50	150	40~240	12	2	0.4	10	1	100	10	1	*27~33	10	-1	10.7	50	SOT-23	F1
	2SC3193	—	30	50	200	40~240	12	2	0.4	10	1	100	10	1	*27~33	10	-1	10.7	50	TO-92(M)	F5
	2SC3192	—	30	50	300	40~240	12	2	0.4	10	1	100	10	1	*27~33	10	-1	10.7	50	TO-92(C)	F3
	KTC9011	—	30	50	400	40~198	5	1	0.4	10	1	100	10	1	—	—	—	—	—	TO-92(B)	F3
AM RF	2SC3878S	—	30	100	150	40~240	12	2	0.4	10	1	80	10	2	3.5	10	-1	1	50	SOT-23	F1
	2SC3191	—	30	100	200	40~240	12	2	0.4	10	1	80	10	2	3.5	10	-1	1	50	TO-92(M)	F5
	2SC3190	—	30	100	400	40~240	12	2	0.4	10	1	80	10	2	3.5	10	-1	1	50	TO-92(C)	F3

*: I_B *: G_{FE} *: V_{CE}

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			Maximum Ratings					Electrical Characteristics (Ta = 25°C)											
	NPN	PNP	V _{CE} (V)	I _C (mA)	P _C (mW)	h _{FE}	h _{FE} (MIN)		V _{CE} (sat)(V)	MAX		f _T (MHz)	MIN		G _{FE} (dB)	MAX		f(MHz)	Fig
							V _{CE} (V)	I _C (mA)		I _C (mA)	I _B (mA)		V _{CE} (V)	I _C (mA)		V _{CE} (V)	I _C (mA)		
VHF RI	KTC2348	—	30	20	250	20~200	10	2	—	—	—	400	10	2	20~28	10	0	0	F3
	2SC3882S	—	15	40	150	40~200	3	8	—	—	—	650	10	8	*1.3	*10	—	1	F1
VHF OSC	KTC2349	—	15	50	250	(20)	3	8	—	—	—	600	10	8	*1.5	*10	—	1	F3
	BFQ31	—	15	100	200	(20)	1	3	0.4	10	1	600	10	4	*1.7	*10	—	1	F1
UHF OSC, UHF MIX	KTC2347	—	15	50	250	(20)	3	8	—	—	—	650	10	8	*1.5	*10	—	1	F3
UHF MIX, RF	KTC3120S	—	15	50	150	40~200	10	5	—	—	—	1,500	10	2	*0.9	10	—	800	F1
UHF OSC	KTC3121S	—	15	50	150	60~120	3	8	—	—	—	1,100	10	8	*1.3	*10	—	1	F1

1A PFI	2SC3881S	—	25	50	150	20~200	10	10	0.2	15	1.5	250	10	10	*1.6	*10	—	1	SOT-23
	2SC3196	—	40	50	250	(30)	10	4	—	—	—	400	10	4	32~40	12	4	1	TO-92(C)
	2SC3197	—	25	50	300	20~200	12.5	12.5	0.2	15	1.5	300	12.5	12.5	28~36	12.5	12.5	45	TO-92(C)

*C_{ob}, *C_{ce}, *V_{CE}

Applications	Type No		Maximum Ratings					Electrical Characteristics (Ta = 25°C)											Package	
			Maximum Ratings					Electrical Characteristics (Ta = 25°C)												
	NPN	PNP	V _{CE0} (V)	I _C (A)	P _C (W)	h _{FE}	h _{FE}		V _{CE(sat)} (V)	MAX		f _T (MHz)	TYP		C _{ob} (PF)	TYP				
							V _{CE} (V)	I _C (mA)		I _C (mA)	I _B (mA)		V _{CE} (V)	I _C (mA)		V _{CE} (V)	I _C (mA)	V _{CE} (V)	f (MHz)	
1V Vertical Output	2SC3205	2SA1273	30	2	1	100~320	2	500	2.0	1.5A	30	120	2	500	30	10	1	TO-92L	F4	
	2SC4369	2SA1658	30	1	1.5	40~400	2	500	0.8	2A	0.2A	100	2	500	35	10	1	TO-220S	F7	
	2SC4368	2SA1657	150	1.5	20	40~140	10	500	1.5	500	50	4	10	500	35	10	1	TO-220S	F7	
	2SD2058A	—	60	1	2.5	60~300	5	500	1.0	3A	0.3A	3.0	5	500	70	10	1	TO-220S	F7	
	—	2SB1366	60	1	2.5	60~300	5	500	1.0	3A	0.3A	9	5	500	150	10	1	TO-220S	F7	
	2SC3230	2SA1276	30	1	10	70~240	2	500	0.8	2A	0.2A	100	2	500	35	10	1	TO-220AB	F6	
	2SD1351A	—	60	1	2.5	60~300	5	500	1.0	3A	0.3A	3.0	5	500	70	10	1	TO-220AB	F6	
	—	2SB988	60	1	30	60~200	5	500	1.0	3A	0.3A	9	5	500	150	10	1	TO-220AB	F6	
	KTC2073	KTA940	150	1.5	25	40~140	10	500	1.5	500	50	4	10	500	35	10	1	TO-220AB	F6	

[illegible]

	25C3206	KTA949	150	0.05	0.8	70~240	5	10	0.5	10	1	30	5	10	1	TO-92L	F4
	25C3207	—	300	0.1	0.9	(20)	10	4	1.0	10	1	50	(3.0)	20	1	TO-92L	F4
	25C3229	—	300	0.05	1.5	(20)	10	0.5	1.0	10	1	75	20	20	1	TO-202	F8
	25C3208	—	300	0.15	*12.5	40~170	10	50	1.0	100	20	40	30	50	1	TO-220AB	F6
	KTC15691	—	300	0.15	*12.5	40~170	10	50	1.0	100	20	100	30	50	1	TO-220MS	F7

$p_c^{\text{eff}}, T_c = 25^\circ\text{C}$

Applications	Type No		Maximum Ratings Tc = 25°C										Electrical Characteristics (Ta = 25°C)										Package	
			V _{CEO} (V)	I _C (A)	P _C (W)	h _{FE}	(MIN)		V _{CE(sat)}		MAX		V _{AG(sat)} (V)	MAX		SW time (TYP)		MAX						
	V _{CE} (V)	I _C (A)					I _C (A)	I _B (A)	I _C (A)	I _B (A)	t _{on} (μs)	t _{off} (μs)		t _f (μs)										
Switching Regulator		NPN	—																					
			2SC4371	—	400	5	30	(12)	5	3	1.0	5	1	1.5	5	1	*1.0	2.5	1.0	TO-220IS	F7			
			KTD1947	—	100	10	30	(500)	1	1	0.3	5	0.05	1.2	5	0.05	(0.5)	(5.0)	(1.0)	TO-220IS	F7			
			KTC3148	—	800	3	40	(10)	5	0.8	0.6	0.8	0.16	1.2	0.8	0.16	*1.0	4.0	1.0	TO-220AB	F6			
			KTC2553	—	400	5	40	(12)	5	3	1.0	5	1	1.5	5	1	*1.0	2.5	1.0	TO-220AB	F6			
			KTC2200	—	400	7	40	(10)	5	3	1.5	3	0.3	2.0	3	0.3	*1.0	2.0	1.0	TO-3P(S)	F11			
			KTC2791	—	800	5	100	(10)	5	10mA	1.0	3	0.6	1.5	3	0.6	*1.0	3.5	1.0	TO-3P(L)	F12			
			KTC2650	—	400	10	100	(10)	5	5	1.5	5	0.5	2.0	5	0.5	*1.0	2.5	1.0	TO-3P(L)	F12			
			KTC3680	—	800	7	120	(10)	5	10mA	1.0	3	0.6	1.5	3	0.6	*1.0	3.5	1.0	TO-3P(L)	F12			
			BUV48A	—	450	15	(150)	—	—	—	1.5	8	1.6	1.6	8	1.6	1	3	0.8	TO-3P(L)	F12			
Darlington			BUV48C	—	700	15	(175)	—	—	—	1.5	6	1.5	1.5	6	1.5	1	3	0.7	TO-3P(L)	F12			
			KTD686	—	80	4	30	(2000)	2	1	1.5	3	6mA	2	3	6mA	0.2	1.5	0.6	TO-220AB	F6			
			BU806	—	200	8	(60)	—	—	—	1.5	5	0.05	2.8	5	0.5	0.35	0.55	0.2	TO-220AB	F6			

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Applications	Type No		Electrical Characteristics (Ta = 25°C)																		Package	
			Maximum Ratings			Electrical Characteristics (Ta = 25°C)																
			V _{CEO} (V)	I _C (mA)	P _D (mW)	h _{FE}		V _{CE(sat)}	MAX		f _T	MIN		SW Time			MAX					
NPN	PNP					V _{CE} (V)	I _C (mA)	I _B (mA)	I _C (mA)	I _B (mA)	(MHz)	V _{CE} (V)	I _C (mA)	I _B (mA)	t _{on} (ns)	t _{off} (ns)	t _{sw} (ns)	t _f (ns)	Fig			
Switching	2N3904	2N3906	40	200	625	*100~300	1.0	10	0.2	10	1.0	300	20	10	—	—	35	200	50	TO-92(B)	F3	
	—	2N5401	150	600	625	*60~240	5.0	1.0	0.2	10	1.0	100	10	10	—	—	—	—	—	TO-92(B)	F3	
	2N5551	—	160	600	625	*80~250	5.0	10	0.2	10	5.0	100	10	10	—	—	—	—	—	TO-92(B)	F3	
	KTN2369	—	15	500	625	*40~120	1.0	10	0.25	10	1.0	500	10	10	12	—	—	13	—	TO-92(B)	F3	
	KTN2369A	—	15	500	625	*40~120	1.0	10	0.3	10	1.0	500	10	10	12	—	—	13	—	TO-92(B)	F3	
	KTN2222	KTN2907	30	600	625	(50)	10	1.0	0.4	150	15	250	20	20	—	—	10	25	225	60	TO-92(B)	F3
	KTN2222A	KTN2907A	40	600	625	(50)	10	1.0	0.3	150	15	360	20	20	—	—	10	25	225	60	TO-92(B)	F3
	—	*MPSA92	100	500	625	*125	10	1.0	0.5	20	2.0	50	20	10	—	—	—	—	—	—	TO-92(B)	F3
	—	*MPSA93	200	500	625	*125	10	1.0	0.4	20	2.0	50	20	10	—	—	—	—	—	—	TO-92(B)	F3

* Pulse width 100μs, Duty Cycle 20%

Applications	Type No	Electrical Characteristics (T _a = 25°C)												Package				
		Maximum Ratings				Electrical Characteristics												
		V _{CEO} (V)	I _C (A)	P _C (W)	h _{FE}	V _{CE(sat)}		MAX		f _T (MHz)	TYP		C _{ob} (pF)			V _{CE} (V)	f (MHz)	
						V _{CE} (V)	I _C (mA)	I _C (mA)	I _h (mA)		V _{CE} (V)	I _C (mA)						
27MHz Drive/Output	KTC2036A	80	1	1.2	100	2	150	0.7	500	20	150	10	100	12	10	1	TO-202	F8
	KTC2075	80	4	1.10	25	5	0.5A	1.5	3A	0.3A	100	5	500	40	V _{CE1} = 10	1	TO-229AB	F6
High & Low V _{CE(sat)}	KTC3112	50	0.15	0.4	600~3600	6	2	0.25	100	10	250	10	10	3.5	10	1	TO-92L	F3
	KTD1582	50	1	1	800~3200	5	0.3A	0.3	0.5A	5	250	10	10	18	10	1	TO-92L	F4
Strobe Flash	2SC3226	10	2	0.9	140~600	1	0.5A	0.5	2A	50	150	1	0.5A	27	10	1	TO-92L	F4
	2SC4377	30	2	1.1	140~600	1	0.5A	0.5	2A	50	150	1	0.5A	27	10	1	SOI-89	F2
	—	20	5	1.10	100~320	2	0.5A	1	4A	0.1A	170	2	0.5A	62	10	1	SOI-13	F13
Mixing	*KTC2878	20	0.3	0.4	200~1200	2	4	0.3	30	3	30	6	4	4.8	10	1	TO-92(C)	F3

Pc: Ta = 25°C Pc: mounted on ceramic substrate (250mm² × 0.8)