

Applications	Type No		Maximum Ratings			Electrical Characteristics (Ta=25°C)												Package			
			V _{CE0} (V)	I _C (mA)	P _C (mW)	h _{FE}	(MIN)		MAX		f _T (MHz)	(TYP) MIN		NF (dB)	MAX						
	V _{CE} (V)	I _C (mA)					V _{CE(sat)} (V)	I _C (mA)	I _B (mA)	V _{CE} (V)		I _C (mA)	V _{CE} (V)		I _E (mA)	f (MHz)	R _g (Ω)				
	NPN	PNP																	Fig		
	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
	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/A-F-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_E *: G_{FE} *: V_{CE}

Applications	Type No		Maximum Ratings										Electrical Characteristics (Ta = 25°C)									
			Maximum Ratings					Electrical Characteristics (Ta = 25°C)					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)	Package			
							V _{CE} (V)	I _C (mA)		I _C (mA)	I _B (mA)		V _{CE} (V)	I _C (mA)		V _{CC} (V)	I _C (mA)					
VHF RI	KTC2348	—	30	20	250	20~200	10	2	—	—	—	400	10	2	20~28	10	0	0	TO-92(C)	F3		
	2SC3882S	—	15	40	150	40~200	3	8	—	—	—	650	10	8	*1.3	*10	—	1	SOT-23	F1		
	KTC2349	—	15	50	250	(20)	3	8	—	—	—	600	10	8	*1.5	*10	—	1	TO-92(C)	F3		
VHF OSC	BFQ31	—	15	100	200	(20)	1	3	0.4	10	1	600	10	4	*1.7	*10	—	1	SOT-23	F1		
	KTC2347	—	15	50	250	(20)	3	8	—	—	—	650	10	8	*1.5	*10	—	1	TO-92(C)	F3		
	KTC3120S	—	15	50	150	40~200	10	5	—	—	—	1,500	10	2	*0.9	10	—	800	SOT-23	F1		
UHF OSC	KTC3121S	—	15	50	150	60~120	1	8	—	—	—	1,100	10	8	*1.3	*10	—	1	SOT-23	F1		

1A PFI	2SC3881S	—	25	50	150	20~200	10	10	0.2	15	1.5	250	10	10	*1.6	*10	—	1	F1
	2SC3196	—	40	50	250	(30)	10	4	—	—	—	400	10	4	32~40	12	4	1	F3
	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	F3

*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		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)		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	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	1	TO-220LS	F7
	2SC4368	2SA1657	150	1.5	20	40~140	10	500	1.5	500	50	4	10	500	35	10	1	1	TO-220LS	F7
	2SD2058A	—	60	1	2.5	60~300	5	500	1.0	3A	0.3A	3.0	5	500	70	10	1	1	TO-220LS	F7
	—	2SB1366	60	1	2.5	60~300	5	500	1.0	3A	0.3A	9	5	500	150	10	1	1	TO-220LS	F7
	2SC3230	2SA1276	30	1	10	70~240	2	500	0.8	2A	0.2A	100	2	500	35	10	1	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	1	TO-220AB	F6
	—	2SB988	60	1	30	60~200	5	500	1.0	3A	0.3A	9	5	500	150	10	1	1	TO-220AB	F6
	KTC2073	KTA940	150	1.5	25	40~140	10	500	1.5	500	50	4	10	500	35	10	1	1	TO-220AB	F6

Applications	Type No	Electrical Characteristics (Ta = 25°C)													Package			
		Maximum Ratings			h _{FE}	(MIN)		V _{CE(sat)}		f _T		(TYP)		MIN			Cob	(TYP) MAX
		V _{CE} (V)	I _C (A)	P _C (W)		V _{CE} (V)	I _C (mA)	I _B (mA)	I _C (mA)	I _B (mA)	f _T (MHz)	V _{CE} (V)	I _C (mA)		V _{CE} (V)	f _T (MHz)		
		NPN	PNP															Fig
TV Horizontal Output		2SC3231	—	—	60	4	*40	30~150	5	1A	0.4A	(8)	5	0.5A	—	—	—	F6
		KTC2233H	—	—	60	4	*35	30~150	5	1A	0.4A	(8)	5	0.5A	—	—	—	F7
		KTD1069	—	—	150	7	*40	(10)	1.5	5A	0.5A	(18)	10	0.2A	—	—	—	F6
		*KTD1427	—	—	600	5	*80	(8)	5	1A	0.8A	(3)	10	0.1A	(165)	1	—	F10
		KTD1554	—	—	600	3.5	*40	(8)	5	0.5A	0.8A	(3)	10	0.1A	(95)	1	—	F11
		KTD1555	—	—	600	5	*50	(8)	5	1A	0.8A	(3)	10	0.1A	(165)	1	—	F11
		*BU508A	—	—	700	8	*60	—	—	—	4.5A	2A	(7)	5	0.1A	(125)	1	—

Video Output	2SC3206	2SA949	150	0.05	0.8	70~240	5	10	0.5	10	1	(120)	30	10	5	10	1	TO-92L	F4
	2SC3207	—	300	0.1	0.9	(120)	10	4	1.0	10	1	50	10	20	(3.0)	20	1	TO-92L	F4
	2SC3229	—	300	0.05	1.5	(120)	10	0.5	1.0	10	1	75	20	20	4.0	20	1	TO-202	F8
	2SC3208	—	300	0.15	*12.5	40~170	10	50	1.0	100	20	40	10	30	6.5	50	1	TO-220AB	F6
	KTC15691	—	300	0.15	*12.5	40~170	10	50	1.0	100	20	100	10	30	5.0	50	1	TO-220S	F7

TV Sound Output	2SC3203	2SA1271	30	0.8	0.6	100~120	1	100	0.5	500	20	(120)	5	10	(15)	10	1	TO-92(C)	F3
	2SC3228	2SA1275	160	1	0.9	60~120	5	200	1.5	500	50	20	5	200	20	10	1	TO-92L	F4
	2SC3205	2SA1273	30	2	1	100~120	2	500	2.0	1.5A	30	(120)	2	500	(30)	10	1	TO-92L	F4
	2SC4369	2SA1658	30	3	*15	40~400	2	500	0.8	2A	0.2A	(100)	2	500	(35)	10	1	TO-220IS	F7
	2SD3058A	—	60	3	*25	60~300	5	500	1.0	3A	0.3A	(3.0)	5	500	(70)	10	1	TO-220IS	F7
	—	2SB1366	60	3	*25	60~300	5	500	1.0	3A	0.3A	(9)	5	500	(150)	10	1	TO-220IS	F7
	2SC3230	2SA1276	30	3	*10	70~240	2	500	0.8	2A	0.2A	(100)	2	500	(35)	10	1	TO-220AB	F6
	2SD1351A	—	60	3	*25	60~300	5	500	1.0	3A	0.3A	(3.0)	5	500	(70)	10	1	TO-220AB	F6
	—	2SB988	60	3	*30	60~200	5	500	1.0	3A	0.3A	(9)	5	500	(150)	10	1	TO-220AB	F6
	KTC2230	—	160	0.1	0.8	120~400	10	10	0.5	50	5	50	10	10	7.0	10	1	TO-92L	F4
	KTC2230A	—	180	0.1	0.8	120~400	10	10	0.5	50	5	50	10	10	7.0	10	1	TO-92L	F4
	KTC2231	—	160	0.2	*12	100~320	10	50	1.0	200	20	50	10	50	10	10	1	TO-202	F8
	KTC2231A	—	180	0.2	*12	100~320	10	50	1.0	200	20	50	10	50	10	10	1	TO-202	F8
	KTC2483	—	160	1.5	*15	100~320	5	200	1.0	500	50	40	5	200	20	10	1	TO-202	F8

P_C: T_C = 25°C

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

* 1.

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

* Pulse width 100µs, Duty Cycle 20%

Applications	Type No	Maximum Ratings										Electrical Characteristics (T _A = 25°C)										Package	
		NPN		PNP		b _{FE}				V _{CE(sat)}		MAX		f _T (MHz)	TYP		C _{ob} (pF)	TYP					
		NPN	PNP	V _{CEO} (V)	I _C (A)	P _C (W)	V _{CE} (V)	I _C (mA)	V _{CE} (V)	I _C (mA)	I _B (mA)	V _{CE} (V)	I _C (mA)		V _{CE} (V)	I _C (mA)		V _{CE} (V)	f _T (MHz)	C _{ob} (pF)	V _{CE} (V)	f _T (MHz)	
27MHz Drive/Output	KTC2036A	—	—	80	1	1.2	100	2	150	0.7	500	20	150	10	100	1	10	12	10	1	TO-202	F8	
	KTC2075	—	—	80	4	1.0	25	5	0.5A	1.5	3A	0.3A	100	5	300	1	V _{CE} = 10	40	1	1	TO-220AB	F6	
High & Low V _{CE(sat)}	KTC3112	—	—	50	0.15	0.4	600~3600	6	2	0.25	100	10	250	10	10	1	10	3.5	10	1	TO-92L	F3	
	KTD1582	—	—	50	1	1	800~3200	5	0.3A	0.3	0.5A	5	250	10	10.5A	1	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	1	10	27	10	1	TO-92L	F4	
	2SC4377	—	—	30	2	*1	140~600	1	0.5A	0.5	2A	50	150	1	0.5A	1	10	27	10	1	SOT-89	F2	
	—	—	—	20	5	*10	100~320	2	0.5A	1	4A	0.1A	170	2	0.5A	1	10	62	10	1	SMD-3	F13	
Mixing	*KTC2878	—	—	20	0.3	0.4	200~1200	2	4	0.3	30	3	30	6	4	1	4.8	10	1	1	TO-92(C)	F3	

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