

FUJITSU

Silicon High Speed Power Transistor

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T-33-13

T-33-23

2SA1043, 2SA1044, 2SC2433, 2SC2434

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

2SA1043, 2SA1044

Parameter	Symbol	Test Conditions	Limits						Unit
			2SA1043			2SA1044			
			Min.	Typ.	Max.	Min.	Typ.	Max.	
Collector Cutoff Current	I_{CBO}	$V_{CB} = -120V, I_E = 0$	—	—	-50	—	—	—	-50
Collector Cutoff Current	I_{CBO}	$V_{CB} = -70V, I_E = 0$	—	—	—	—	—	-50	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = -4V, I_C = 0$	—	—	-50	—	—	-50	μA
Collector Cutoff Current	I_{CEO}	$V_{CE} = -120V, I_B = 0$	—	—	-1	—	—	—	mA
Collector Cutoff Current	I_{CEO}	$V_{CE} = -70V, I_B = 0$	—	—	—	—	—	-1	mA
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -50\mu A, I_E = 0$	-120	—	—	-70	—	—	V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -1mA, I_C = 0$	-5	—	—	-5	—	—	V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -10mA, R_{BE} = \infty\Omega$	-120	—	—	-70	—	—	V
DC Current Gain	h_{FE1}	$V_{CE} = -5V, I_C = -3A^*$	35	—	200	35	—	200	—
DC Current Gain	h_{FE2}	$V_{CE} = -5V, I_C = -30A^*$	7	—	—	10	—	—	—
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -15A, I_B = -1.5A^*$	—	-0.7	-1.5	—	-0.5	-1.5	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$		—	-1.2	-2.0	—	-1.1	-2.0	V
Gain-Bandwidth Product	f_T	$V_{CE} = -10V, I_C = -2A$	—	60	—	—	60	—	MHz
Output Capacitance	C_{ob}	$V_{CB} = -10V, I_E = 0, f = 1MHz$	—	600	—	—	700	—	pF
Rise Time	t_r	$I_C = -15A, R_L = 2\Omega$	—	0.20	0.8	—	0.20	0.8	μs
Storage Time	t_{stg}	$I_{B1} = -I_{B2} = -1.5A$	—	0.24	1.0	—	0.24	1.0	μs
Fall Time	t_f		—	0.08	0.8	—	0.08	0.8	μs

2SC2433, 2SC2434

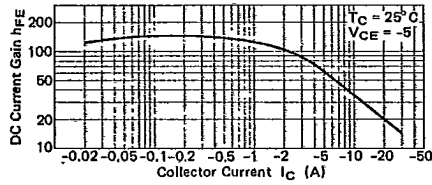
Parameter	Symbol	Test Conditions	Limits						Unit
			2SC2433			2SC2432			
			Min.	Typ.	Max.	Min.	Typ.	Max.	
Collector Cutoff Current	I_{CBO}	$V_{GB} = 120V, I_E = 0$	—	—	50	—	—	—	μA
Collector Cutoff Current	I_{CBO}	$V_{CB} = 70V, I_E = 0$	—	—	—	—	—	50	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 4V, I_C = 0$	—	—	50	—	—	50	μA
Collector Cutoff Current	I_{CEO}	$V_{CE} = 120V, I_B = 0$	—	—	1	—	—	—	mA
Collector Cutoff Current	I_{CEO}	$V_{CE} = 70V, I_B = 0$	—	—	—	—	—	1	mA
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 50\mu A, I_E = 0$	120	—	—	70	—	—	V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 1mA, I_C = 0$	5	—	—	5	—	—	V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10mA, R_{BE} = \infty\Omega$	120	—	—	70	—	—	V
DC Current Gain	h_{FE1}	$V_{CE} = 5V, I_C = 3A^*$	35	—	200	35	—	200	—
DC Current Gain	h_{FE2}	$V_{CE} = 5V, I_C = 30A^*$	7	—	—	10	—	—	—
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 15A, I_B = 1.5A^*$	—	0.5	1.5	—	0.5	1.5	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$		—	1.2	2.0	—	1.2	2.0	V
Gain-Bandwidth Product	f_T	$V_{GE} = 10V, I_C = 2A$	—	80	—	—	80	—	MHz
Output Capacitance	C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1MHz$	—	350	—	—	350	—	pF
Rise Time	t_r	$I_C = 15A, R_L = 2\Omega$	—	0.28	0.8	—	0.28	0.8	μs
Storage Time	t_{stg}	$I_{B1} = -I_{B2} = 1.5A$	—	0.70	1.0	—	0.70	1.0	μs
Fall Time	t_f		—	0.15	0.8	—	0.15	0.8	μs

* Pulsed $P_W \leq 300\mu\text{s}$, Duty Ratio $\leq 6\%$

2SA1043, 2SA1044, 2SC2433, 2SC2434

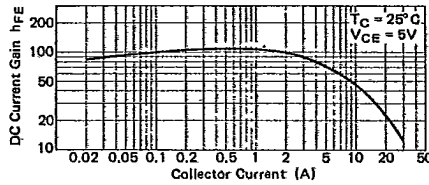
2SC1043, 2SA1044

DC CURRENT GAIN

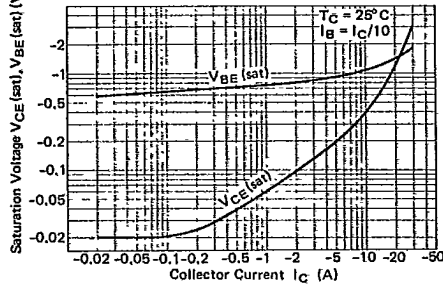


2SC2433, 2SC2434

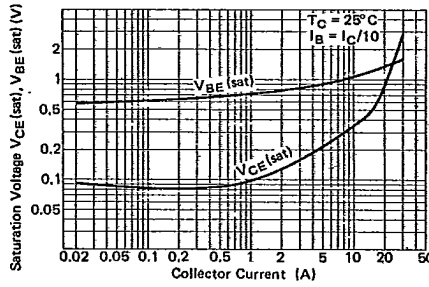
DC CURRENT GAIN



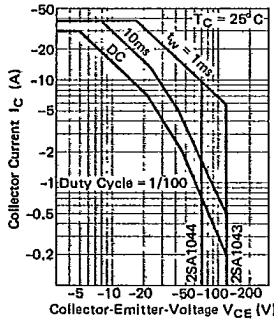
SATURATION VOLTAGE



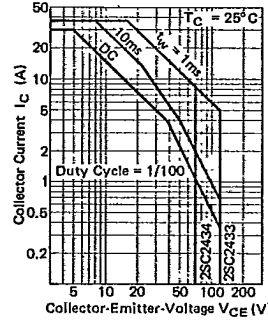
SATURATION VOLTAGE



SAFE OPERATING AREAS



SAFE OPERATING AREAS

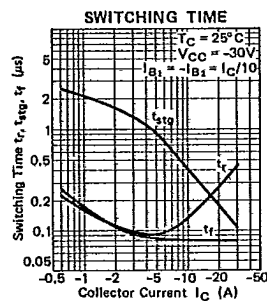
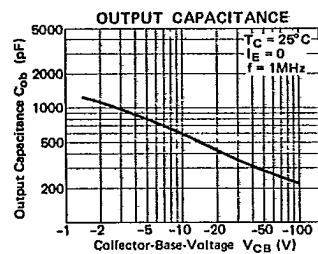
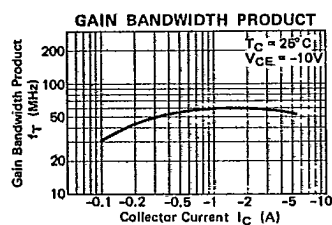


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2SA 1043, 2SA1044



2SC2433, 2SC2434

