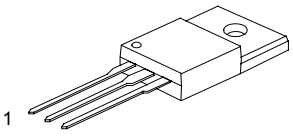
UTC 2SC5305 NPN EPITAXIAL SILICON TRANSISTOR

HIGH VOLTAGE HIGH SPEED POWER SWITCHING TRANSISTOR



TO-220F

1: Base 2: Collector 3: Emitter

*Pb-free plating product number: 2SC5305L

FEATURES

* High hFE for Low base drive requirement
* Suitable for half bridge light ballast Applications
* Built-in Free-wheeling Diode makes it specially suitable for light ballast Applications
* Well controlled storage-time spread for all range of hFE

ABSOLUTE MAXIMUM RATINGS

(T_C=25℃, unless otherwise noted.)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector Base Voltage	V_{CBO}	800	V
Collector Emitter Voltage	V_{CEO}	400	V
Emitter Base Voltage	V_{EBO}	12	V
Collector Current (DC)	I_C	5	A
Collector Current (Pulse)*	I_{CP}	10	A
Base Current (DC)	I_B	2	A
Base Current (Pulse)*	I_{BP}	4	A
Power Dissipation (T_C=25℃)	P_C	75	W
Junction Temperature	T_j	150	℃
Storage Temperature	T_{stg}	-65 ~ 150	℃

THERMAL CHARACTERISTICS

(T_C=25℃, unless otherwise noted.)

PARAMETER	SYMBOL	RATINGS	UNIT
Thermal Resistance			℃/W
Junction to Case	$R\theta_{JC}$	1.65	
Junction to Ambient	$R\theta_{JA}$	62.5	

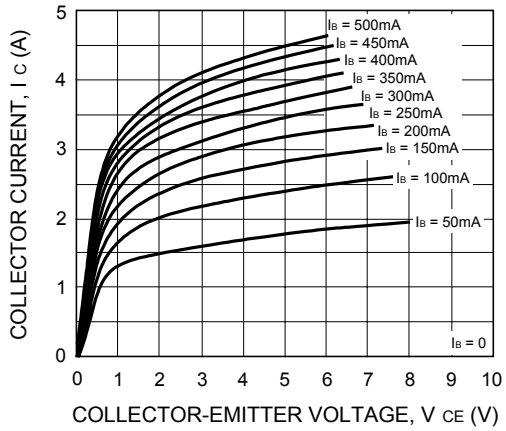
ELECTRICAL CHARACTERISTICS

(T_C=25℃, unless otherwise noted.)

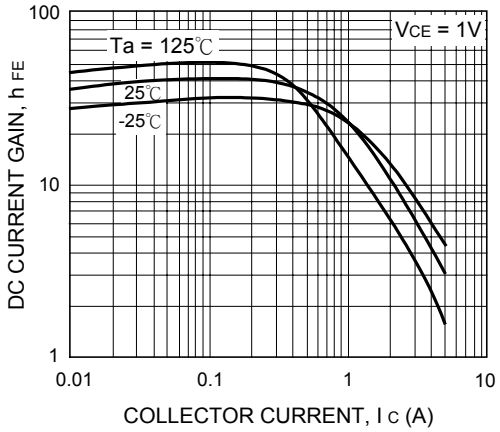
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	I_C = 1mA, I_E = 0	800			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C = 5mA, I_B = 0	400			V
Emitter Cut-off Current	BV_{EBO}	I_E=1mA, I_C=0	12			V
Collector Cut-off Current	I_{CBO}	V_{CB}=500V, I_E=0			10	μA
Emitter Cut-off Current	I_{EBO}	V_{EB} = 9V, I_C = 0			10	μA
DC Current Gain	h_{FE1} h_{FE2}	V_{CE}=1V, I_C=0.8A V_{CE}=1V,I_C=2A	22 8			
Collector-Emitter Saturation Voltage	V_{CE} (sat)	I_C=0.8A, I_B=0.08A I_C=2A, I_B=0.4A			0.4 0.5	V
Base-Emitter Saturation Voltage	V_{BE} (sat)	I_C=0.8A, I_B=0.08A I_C=2A, I_B=0.4A			1.0 1.0	V
Output Capacitance	C_{ob}	VCB = 10V, f=1MHz			75	pF
Turn ON Time	t_{ON}	V_{CC}=300V, I_C =2A			150	ns
Storage Time	t_{STG}	I_{B1} = 0.4A, I_{B2}=-1A			2	μs
Fall Time	t_F	R_L = 150Ω			0.2	μs
Storage Time	t_{STG}	V_{CC}=15V,V_Z=300V			2.25	μs
Fall Time	t_F	I_C = 2A,I_{B1} = 0.4A I_{B2} = -0.4A, L_C=200μH			150	ns
Diode Forward Voltage	V_F	I_F = 1A I_F = 2A			1.5 1.6	V
Reverse recovery time* (di/dt =10A/μs)	t_{rr}	I_F = 0.4A I_F = 1A I_F = 2A		800 1.4 1.9		ns μs μs

*Pulse Test : Pulse Width=5mS, Duty cycles≦10%

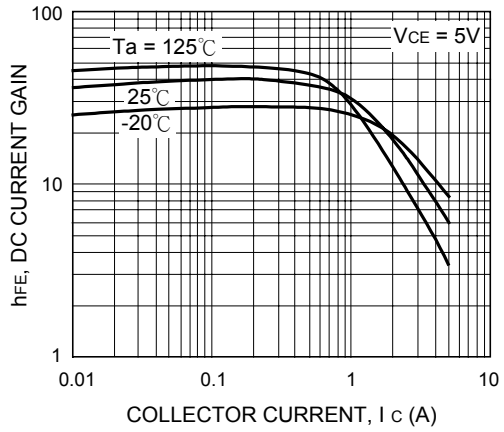
Static Characteristic



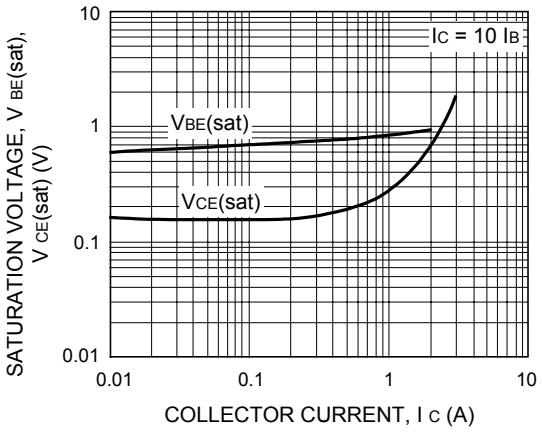
DC current Gain



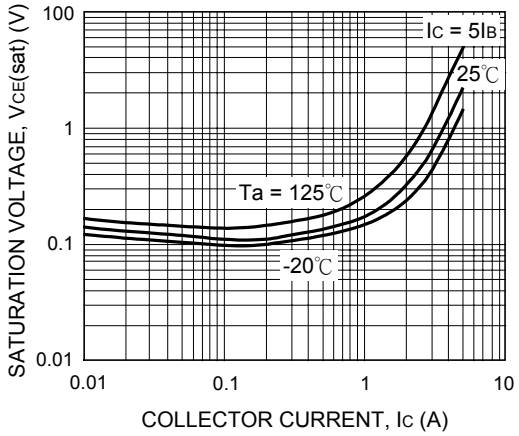
DC current Gain



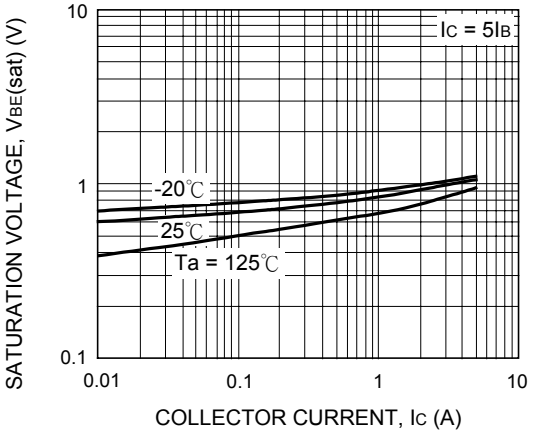
Collector-Emitter Saturation Voltage
Base-Emitter Saturation Voltage



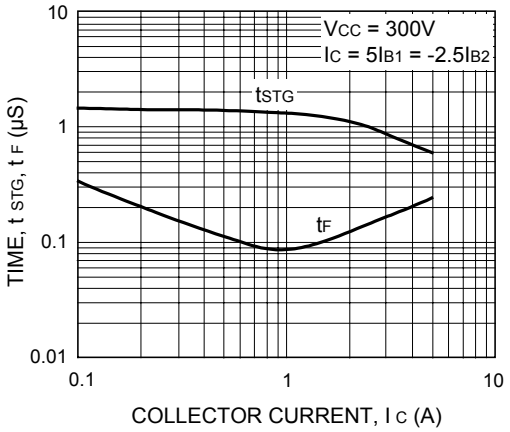
Collector-Emitter Saturation Voltage



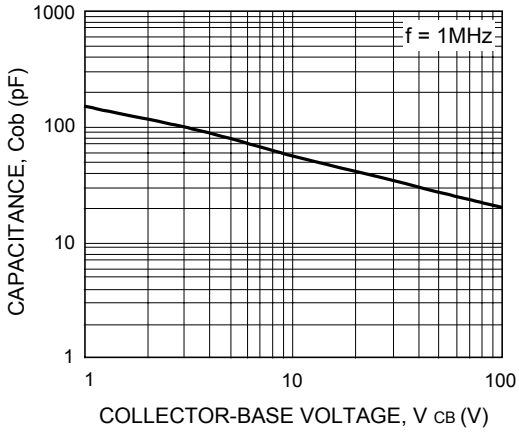
Base-Emitter Saturation Voltage



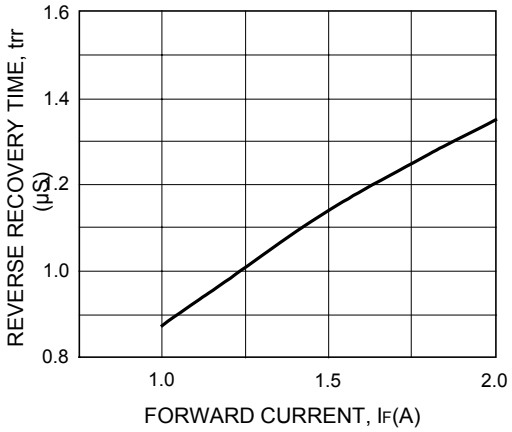
Switching Time



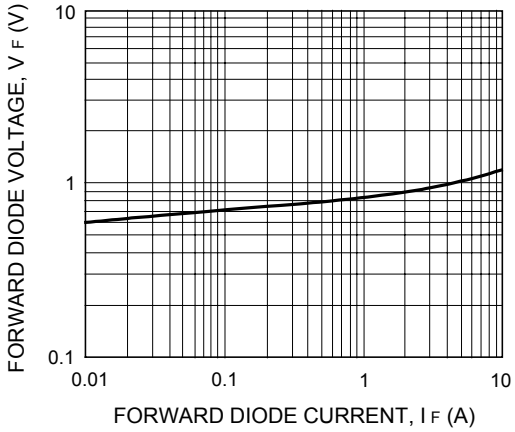
Collector Output Capacitance



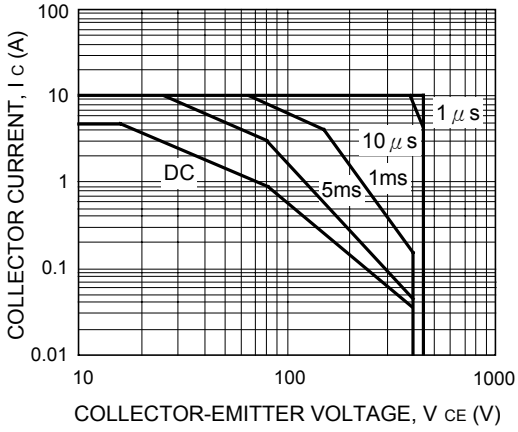
Reverse Recovery Time



Forward Diode Voltage



Safe Operating Area



Power Derating