

RoHS Compliant Product
A suffix of "-C" specifies halogen and lead free

FEATURES

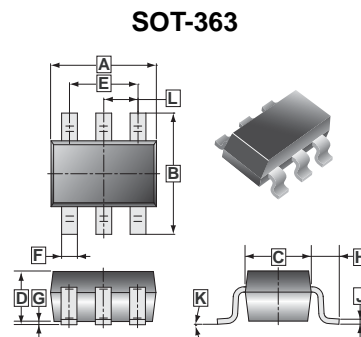
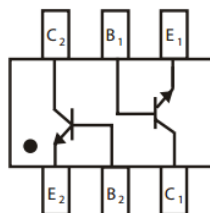
- Power Dissipation P_{CM} : 200mW ($T_a=25^\circ\text{C}$)
- Collector Current I_{CM} : 200mA
- Collector – Base Voltage $V_{(BR)CBO}$: 60V

MARKING



PACKAGING DIMENSION

Package	MPQ	Leader Size
SOT-363	3K	7 inch



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.80	2.20	G	0.100 REF.	
B	1.80	2.45	H	0.525 REF.	
C	1.15	1.35	J	0.08	0.25
D	0.80	1.10	K	8°	
E	1.10	1.50	L	0.650 TYP.	
F	0.10	0.35			

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Collector - Base Voltage	V_{CBO}	60	V
Collector - Emitter Voltage	V_{CEO}	40	V
Emitter - Base Voltage	V_{EBO}	5	V
Collector Current	I_{CM}	0.2	A
Power Dissipation	P_{CM}	200	mW
Junction, Storage Temperature	T_J, T_{STG}	150, -55 ~ 150	$^\circ\text{C}$

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	60	-	-	V	$I_C=10\mu\text{A}, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	40	-	-	V	$I_C=1\text{mA}, I_B=0$
Emitter - Base Breakdown Voltage	$V_{(BR)EBO}$	5	-	-	V	$I_E=10\mu\text{A}, I_C=0$
Collector Cut-Off Current	I_{CBO}	-	-	0.05	μA	$V_{CB}=30\text{V}, I_E=0$
Collector Cut-Off Current	I_{CEO}	-	-	0.05	μA	$V_{CE}=30\text{V}, I_B=0$
Emitter Cut-Off Current	I_{EBO}	-	-	0.05	μA	$V_{EB}=5\text{V}, I_C=0$
DC Current Gain	$h_{FE(1)}$	100	-	300		$V_{CE}=1\text{V}, I_C=10\text{mA}$
	$h_{FE(2)}$	60	-	-		$V_{CE}=1\text{V}, I_C=50\text{mA}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	-	-	0.3	V	$I_C=50\text{mA}, I_B=5\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	-	-	0.95	V	$I_C=50\text{mA}, I_B=5\text{mA}$
Transition Frequency	f_T	300	-	-	MHz	$V_{CE}=20\text{V}, I_C=10\text{mA}, f=100\text{MHz}$
Output Capacitance	C_{ob}	-	-	4	pF	$V_{CB}=5\text{V}, I_E=0, f=1\text{MHz}$
Delay time	T_d	-	-	35	nS	$V_{CC}=3\text{V}, V_{BE}=0.5\text{V}, I_C=10\text{mA}, I_{B1}=1\text{mA}$
Rise time	T_r	-	-	35	nS	
Storage time	T_s	-	-	200	nS	$V_{CC}=3\text{V}, I_C=10\text{mA}, I_{B1}=I_{B2}=1\text{mA}$
Fall time	T_f	-	-	50	nS	

CHARACTERISTIC CURVES

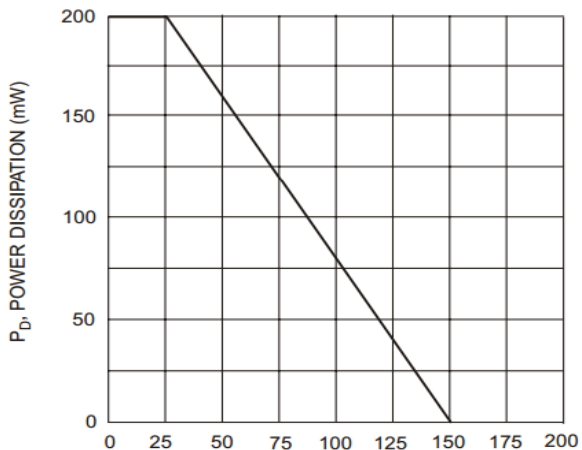


Fig. 1, Max Power Dissipation vs Ambient Temperature

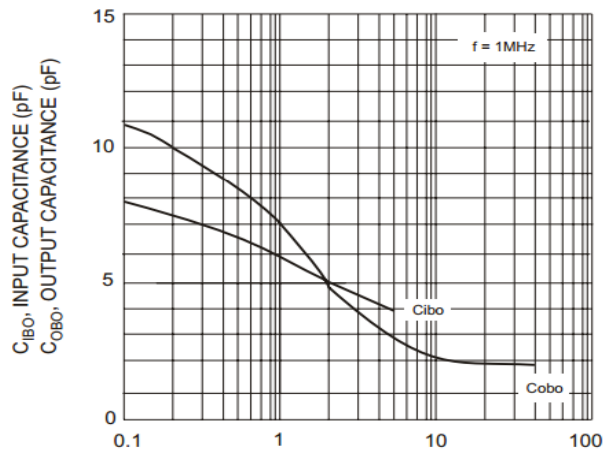


Fig. 2, Input and Output Capacitance vs. Collector-Base Voltage

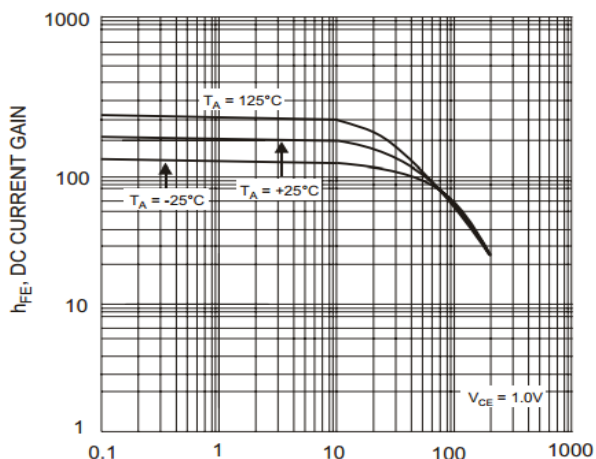


Fig. 3, Typical DC Current Gain vs Collector Current

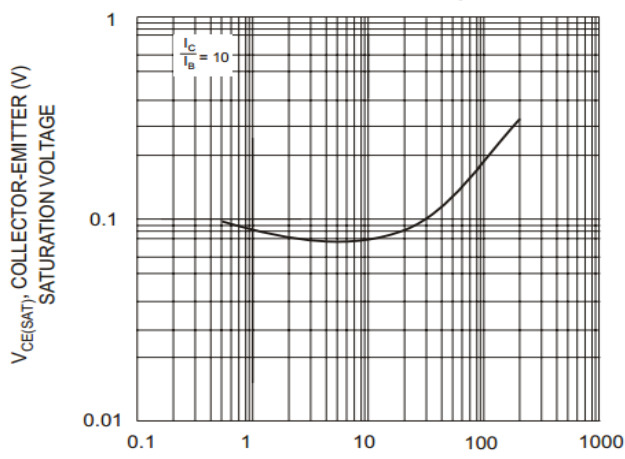


Fig. 4, Typical Collector-Emitter Saturation Voltage vs. Collector Current

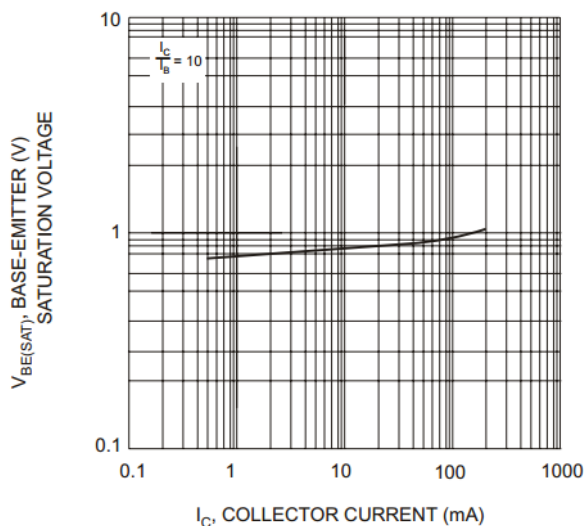


Fig. 5, Typical Base-Emitter Saturation Voltage vs. Collector Current