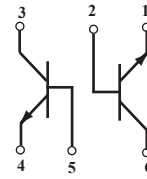
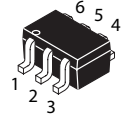


### Epitaxial Planer Transistor Silicon NPN

 Lead(Pb)-Free



NPN+NPN



SOT-363(SC-88)

#### Features:

\* Both 2SC2412K Chip x 2 in a SOT-363

### Maximum Ratings

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V <sub>CEO</sub>	50	Vdc
Collector-Base Voltage	V <sub>CBO</sub>	60	Vdc
Emitter-Base Voltage	V <sub>EBO</sub>	7	Vdc
Collector Current-Continuous	I <sub>C</sub>	150	mAdc

### Thermal Characteristics

Characteristics	Symbol	Max	Unit
Total Device Dissipation <sup>(1)</sup> TA=25°C	P <sub>D</sub>	380	mW
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	328	°C/W
Junction and Storage, Temperature	T <sub>J</sub> , T <sub>stg</sub>	-55 to +150	°C

### Device Marking

W4501DW=5H

### Electrical Characteristics (TA=25°C Unless Otherwise noted)

Characteristics	Symbol	Min	Max	Unit
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### Off Characteristics

Collector-Emitter Breakdown Voltage <sup>(2)</sup> (I <sub>C</sub> =1.0mAdc, I <sub>B</sub> =0)	V(BR)CEO	50	-	Vdc
Collector-Base Breakdown Voltage (I <sub>C</sub> =50 uAdc, I <sub>E</sub> =0)	V(BR)CBO	60	-	Vdc
Emitter-Base Breakdown Voltage (I <sub>E</sub> =50 uAdc, I <sub>C</sub> =0)	V(BR)EBO	7.0	-	Vdc
Emitter Cutoff Current (V <sub>EB</sub> =7.0Vdc)	I <sub>EBO</sub>	-	0.1	μAdc
Collector Cutoff Current (V <sub>CB</sub> =60Vdc)	I <sub>CBO</sub>	-	0.1	μAdc

1. Device Mounted FR4 glass epoxy printed circuit board using the minimum recommended footprint.

2. Pulse Test:Pulse Width≤300uS, Duty Cycle≤2.0%

## Electrical Characteristics ( $T_A=25\text{ }^\circ\text{C}$ unless otherwise noted) (Continued)

Characteristics	Symbol	Min	Typ	Max	Unit
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### On Characteristics

DC Current Gain ( $V_{CE}=6.0\text{Vdc}$ , $I_C=1.0\text{mA}$ )	$h_{FE}$	120	-	560	-
Collector-Emitter Saturation Voltage ( $I_C=50\text{mA}$ , $I_B=5.0\text{mA}$ )	$V_{CE(sat)}$	-	-	0.4	Vdc

### Small-signal Characteristics

Current-Gain-Bandwidth Product ( $V_{CE}=12\text{Vdc}$ , $I_E=-2.0\text{mA}$ , $f=100\text{MHz}$ )	$f_T$	-	180	-	MHz
Output Capacitance ( $V_{CE}=12\text{Vdc}$ , $f=1.0\text{MHz}$ )	Cobo	-	2.0	3.5	Pf

## Electrical Characteristics Curve

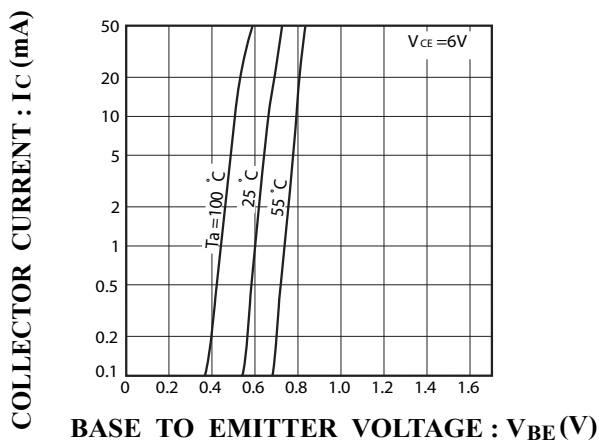


Fig.1 Grounded emitter propagation characteristics

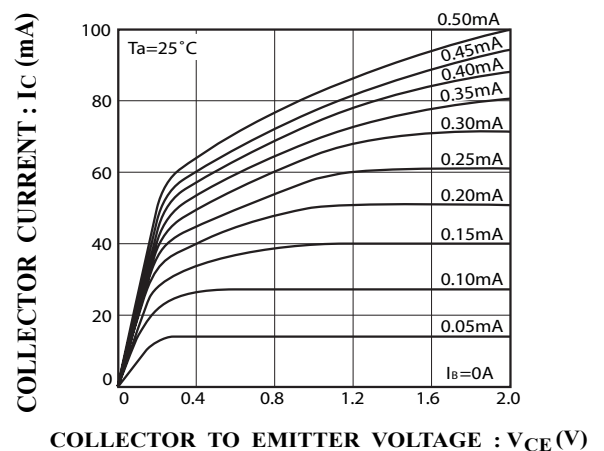


Fig.2 Grounded emitter output characteristics

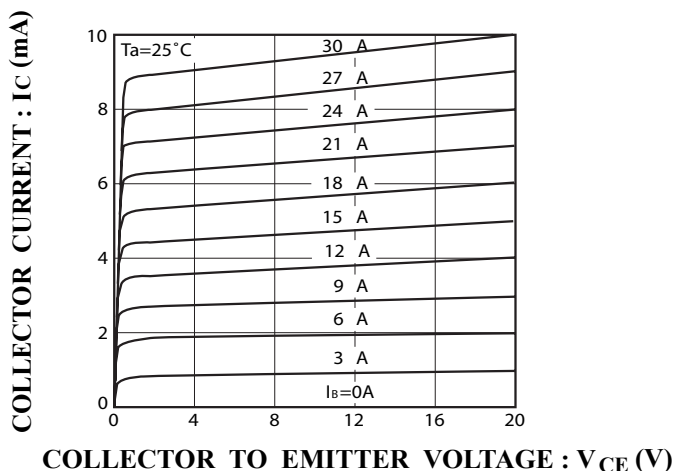


Fig.3 Grounded emitter output characteristics

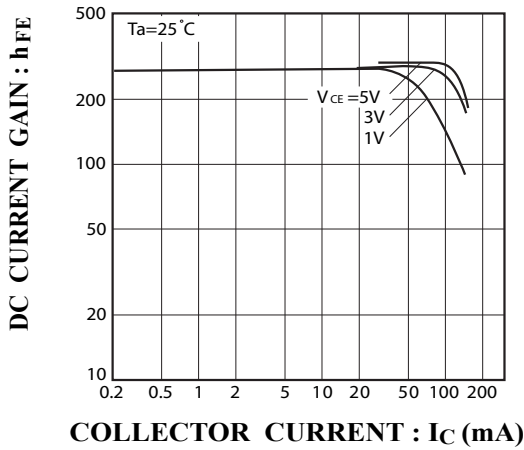


Fig.4 DC current gain vs collector current

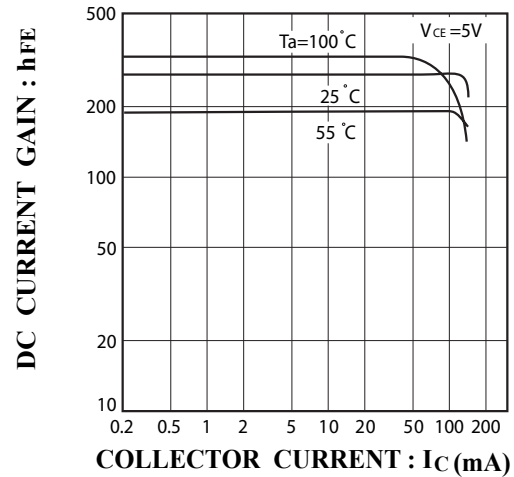


Fig.5 DC current gain vs collector current

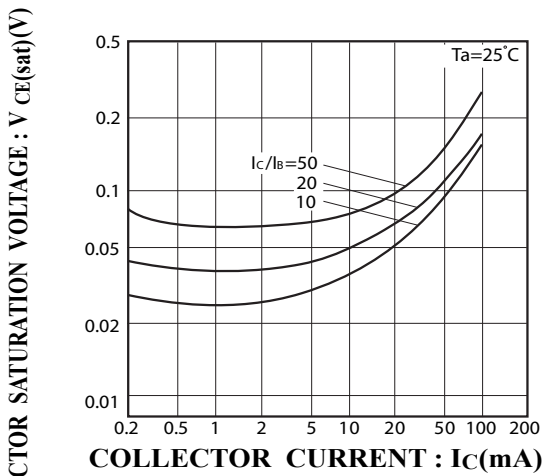


Fig.6 Collector-emitter saturation voltage vs. collector current

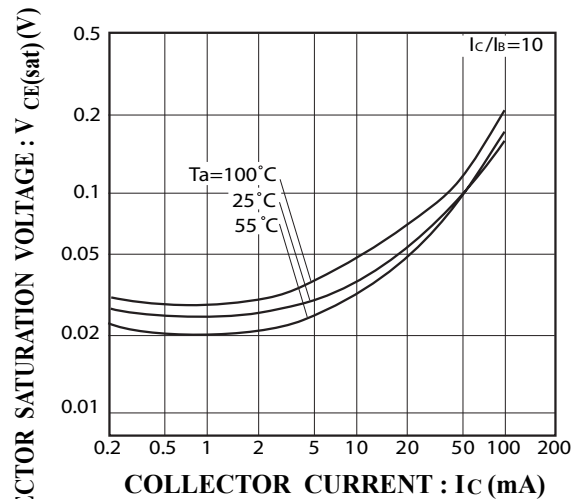


Fig.7 Collector-emitter saturation voltage vs. collector current

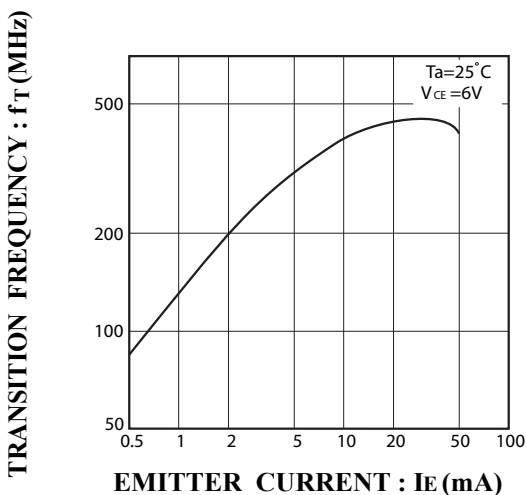


Fig.8 Gain bandwidth product vs emitter current

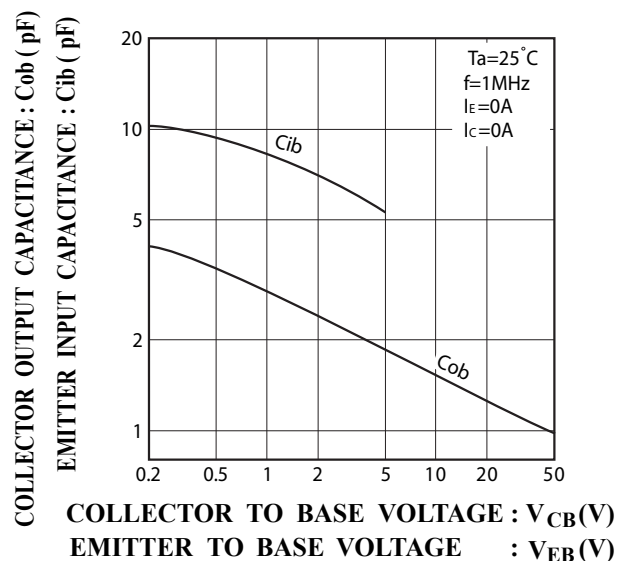
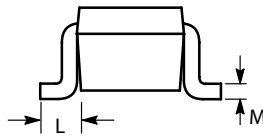
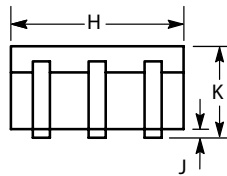
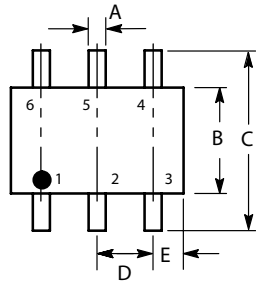


Fig.9 Collector output capacitance vs collector-base voltage  
Emitter input capacitance vs emitter-base voltage

**SOT-363 Package Outline Dimensions**

Unit:mm



SOT-363		
Dim	Min	Max
<b>A</b>	0.10	0.30
<b>B</b>	1.15	1.35
<b>C</b>	2.00	2.20
<b>D</b>	0.65 REF	
<b>E</b>	0.30	0.40
<b>H</b>	1.80	2.20
<b>J</b>	-	0.10
<b>K</b>	0.80	1.10
<b>L</b>	0.25	0.40
<b>M</b>	0.10	0.25