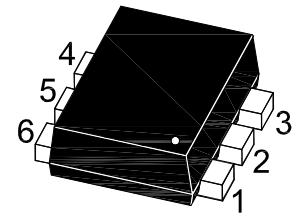
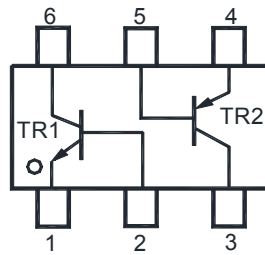


# MMBT7073DE

## NPN / PNP Silicon General Purpose Double Transistor

for switching and amplifier applications.



1. Emitter 2. Base 3. Collector  
4. Emitter 5. Base 6. Collector  
SOT-563 Plastic package

### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ ) TR1

Parameter	Symbol	Value	Unit
Collector Base Voltage	$V_{\text{CBO}}$	60	V
Collector Emitter Voltage	$V_{\text{CEO}}$	50	V
Emitter Base Voltage	$V_{\text{EBO}}$	7	V
Collector Current	$I_{\text{C}}$	150	mA

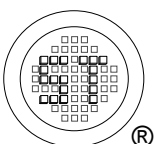
### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ ) TR2

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{\text{CBO}}$	60	V
Collector Emitter Voltage	$-V_{\text{CEO}}$	50	V
Emitter Base Voltage	$-V_{\text{EBO}}$	6	V
Collector Current	$-I_{\text{C}}$	150	mA

### Common Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Value	Unit
Power Dissipation	$P_{\text{tot}}$	150 <sup>1)</sup>	mW
Operation Temperature Range	$T_{\text{j}}$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{\text{stg}}$	- 55 to + 150	$^\circ\text{C}$

<sup>1)</sup> 120mW per element must not be exceeded.



**SEMTECH ELECTRONICS LTD.**



Dated : 02/09/2016 Rev:01

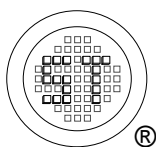
# MMBT7073DE

## Characteristics at $T_a = 25\text{ }^\circ\text{C}$ TR1

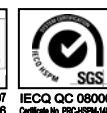
Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_{CE} = 6\text{ V}$ , $I_C = 1\text{ mA}$	$h_{FE}$	120	-	560	-
Collector Base Cutoff Current at $V_{CB} = 60\text{ V}$	$I_{CBO}$	-	-	100	nA
Collector Emitter Cutoff Current at $V_{EB} = 7\text{ V}$	$I_{EBO}$	-	-	100	nA
Collector Base Breakdown Voltage at $I_C = 50\text{ }\mu\text{A}$	$V_{(BR)CBO}$	60	-	-	V
Collector Emitter Breakdown Voltage at $I_C = 1\text{ mA}$	$V_{(BR)CEO}$	50	-	-	V
Emitter Base Breakdown Voltage at $I_E = 50\text{ }\mu\text{A}$	$V_{(BR)EBO}$	7	-	-	V
Collector Emitter Saturation Voltage at $I_C = 50\text{ mA}$ , $I_B = 5\text{ mA}$	$V_{CE(sat)}$	-	-	0.4	V
Gain Bandwidth Product at $-I_E = 2\text{ mA}$ , $V_{CE} = 12\text{ V}$ , $f = 100\text{ MHz}$	$f_T$	-	180	-	MHz
Collector Output Capacitance at $V_{CB} = 12\text{ V}$ , $I_E = 0\text{ A}$ , $f = 1\text{ MHz}$	$C_{ob}$	-	-	3.5	pF

## Characteristics at $T_a = 25\text{ }^\circ\text{C}$ TR2

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $-V_{CE} = 6\text{ V}$ , $-I_C = 1\text{ mA}$	$h_{FE}$	120	-	560	-
Collector Base Cutoff Current at $-V_{CB} = 60\text{ V}$	$-I_{CBO}$	-	-	100	nA
Collector Emitter Cutoff Current at $-V_{EB} = 6\text{ V}$	$-I_{EBO}$	-	-	100	nA
Collector Base Breakdown Voltage at $-I_C = 50\text{ }\mu\text{A}$	$-V_{(BR)CBO}$	60	-	-	V
Collector Emitter Breakdown Voltage at $-I_C = 1\text{ mA}$	$-V_{(BR)CEO}$	50	-	-	V
Emitter Base Breakdown Voltage at $-I_E = 50\text{ }\mu\text{A}$	$-V_{(BR)EBO}$	6	-	-	V
Collector Emitter Saturation Voltage at $-I_C = 50\text{ mA}$ , $-I_B = 5\text{ mA}$	$-V_{CE(sat)}$	-	-	0.5	V
Gain Bandwidth Product at $I_E = 2\text{ mA}$ , $-V_{CE} = 12\text{ V}$ , $f = 100\text{ MHz}$	$f_T$	-	140	-	MHz
Collector Output Capacitance at $-V_{CB} = 12\text{ V}$ , $I_E = 0\text{ A}$ , $f = 1\text{ MHz}$	$C_{ob}$	-	-	5	pF



**SEMTECH ELECTRONICS LTD.**



ISO 9001:2008  
Certificate No. 16173009

ISO 14001:2004  
Certificate No. 7116

ISO 9001:2008  
Certificate No. 5079410

BS-OHSAS 18001:2007  
Certificate No. 7116

IECQ QC 080000  
Certificate No. PRC-08000-083

Dated : 02/09/2016 Rev:01

# MMBT7073DE

TR1 (NPN)

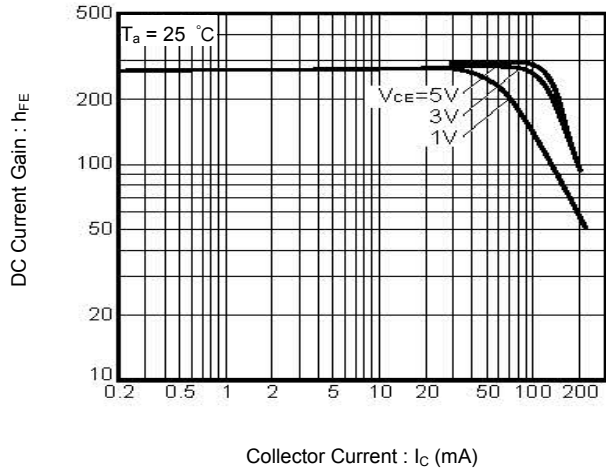


Figure 1. DC Current Gain vs. Collector Current

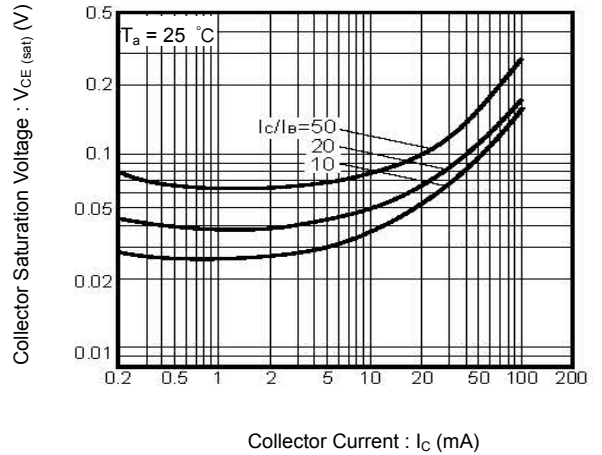


Figure 2. Collector-Emitter Saturation Voltage vs. Collector Current

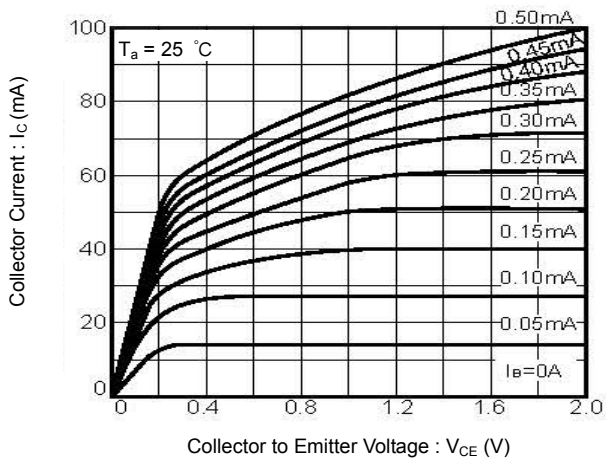
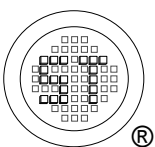


Figure 3. Grounded Emitter output Characteristics



**SEMTECH ELECTRONICS LTD.**



ISO/TS 16949 : 2009 Certificate No. 16073009  
 ISO14001 : 2004 Certificate No. 7116  
 ISO 9001 : 2008 Certificate No. 5079410  
 BS-OHSAS 18001 : 2007 Certificate No. 7116  
 IECQ QC 080000 Certificate No. PRC-18PFA-V05-1

Dated : 02/09/2016 Rev:01

# MMBT7073DE

TR2 (PNP)

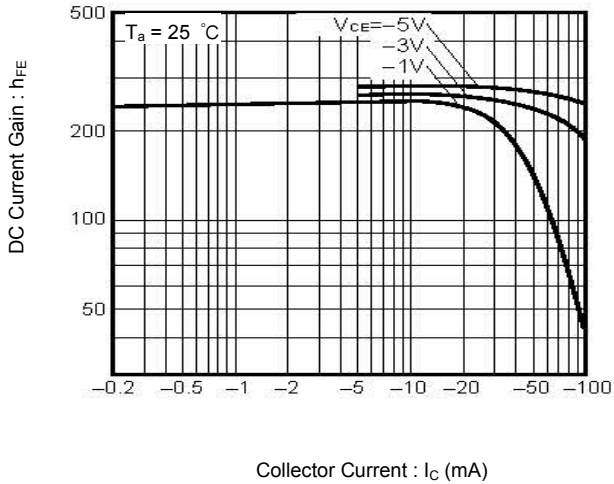


Figure 1. DC Current Gain vs. Collector Current

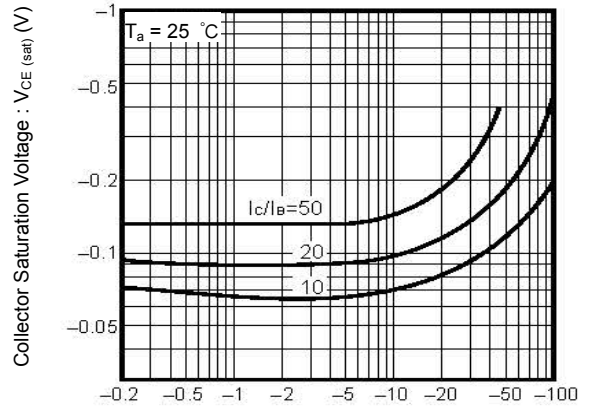


Figure 2. Collector-Emitter Saturation Voltage vs. Collector Current

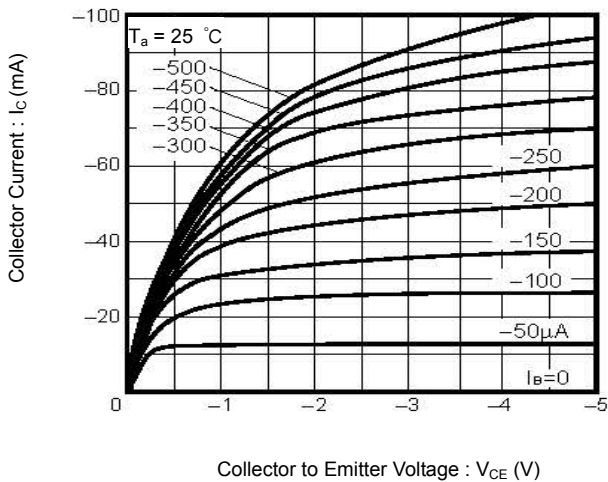
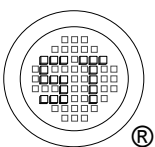


Figure 3. Grounded Emitter output Characteristics



**SEMTECH ELECTRONICS LTD.**

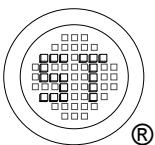
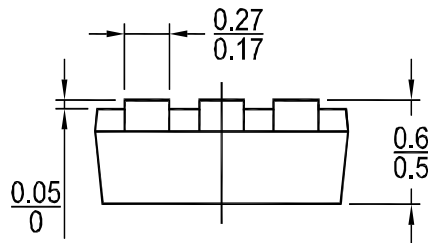
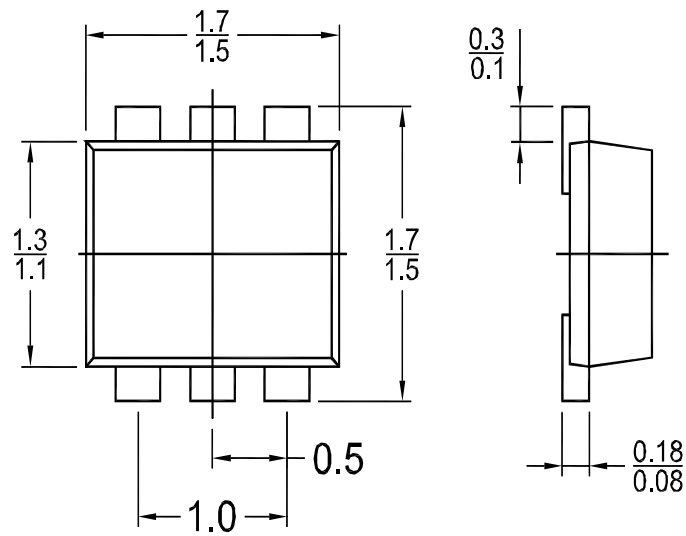
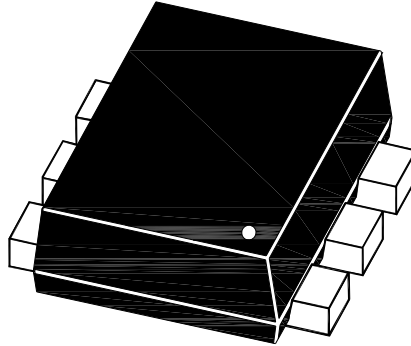


ISO/TS 16949 : 2009 Certificate No. 16173009  
 ISO14001 : 2004 Certificate No. 7116  
 ISO 9001 : 2008 Certificate No. 5079410  
 BS-OHSAS 18001 : 2007 Certificate No. 7116  
 IECQ QC 080000 Certificate No. PRC-18P16-V05-1

Dated : 02/09/2016 Rev:01

# MMBT7073DE

## SOT-563 Package Outline Dimensions (Units: mm)



**SEMTECH ELECTRONICS LTD.**



ISO 9001 : 2008  
Certificate No. 16073309



ISO 14001 : 2004  
Certificate No. 7116



ISO 9001 : 2008  
Certificate No. 5079410



BS-OHSAS 18001 : 2007  
Certificate No. 7116



IECQ QC 080000  
Certificate No. PRC-18784-V05-1

Dated : 02/09/2016 Rev:01