





**Solid State Devices, Inc.**

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**SFT6678 SERIES**

Electrical Characteristics		Symbol	Min	Max	Units
<b>Collector Cutoff Current</b> $V_{CE}=650V_{DC}, V_{BE(off)}=1.5V_{DC}$	$T_C=25^{\circ}C$	$I_{CEV}$	-	0.1	mA
	$T_C=100^{\circ}C$		-	1.0	
<b>Collector – Base Leakage Current</b>	$V_{CB}=650V$	$I_{CBO}$	-	1	mA
<b>Emitter Cutoff Current</b>	$(V_{EB} = 8V, I_C = 0)$	$I_{EBO}$	-	2	mA
<b>Collector-Emitter Sustaining Voltage</b> $(I_C = 200mA, I_B = 0)$		$V_{CEO(sus)}$	400	-	$V_{DC}$
<b>DC Current Gain *</b>	$V_{CE}=3V, I_C=15A, T_A= 25^{\circ}C$	$H_{FE1}$	8	-	
	$V_{CE}=3V, I_C=1A, T_A= 25^{\circ}C$	$H_{FE2}$	15	-	
	$V_{CE}=3V, I_C=15A, T_A= -55^{\circ}C$	$H_{FE3}$	4	-	
<b>Base-Emitter Saturation Voltage *</b> $(I_C = 15A_{DC}, I_B = 3A_{DC})$		$V_{BE (SAT)}$	-	1.5	$V_{DC}$
<b>Collector-Emitter Saturation Voltage *</b> $(I_C = 15A, I_B = 3A)$	$(T_C = 25^{\circ}C)$ $(T_C = 100^{\circ}C)$	$V_{CE (SAT)}$		1.5 2.0	$V_{DC}$
<b>Second Breakdown</b> $(t = 1.0 \text{ sec}, T_C = 25^{\circ}C)$	$(V_{CC} = 11.7V)$	$I_{S/b1}$	15.0	-	A
	$(V_{CC} = 20V)$	$I_{S/b2}$	8.75	-	A
	$(V_{CC} = 100V)$	$I_{S/b3}$	0.3	-	A
<b>Reverse Bias Second Breakdown</b> $(V_{BE(off)} = 1 \text{ to } 6V, V_{CLAMP} = 450V, T_C \leq 100^{\circ}C)$		<b>RBSOA</b>	15.0	-	A
<b>Current Gain</b> $(I_C = 1A, V_{CE} = 10V_{DC}, f = 5MHz)$		$ h_{FE} $	3	10	
<b>Output Capacitance</b> $(V_{CB} = 10V_{DC}, f = 0.1MHz)$		$C_{ob}$	150	500	pF
<b>Delay Time</b> <b>Storage Time</b> <b>Rise Time</b> <b>Fall Time</b>	$(V_{CC} = 200V_{DC}, I_C = 15A_{DC},$ $I_{B1} = I_{B2} = 3A_{DC},$ $t_p = 50 \mu\text{sec}, \text{Duty Cycle} \leq 2\%$ $V_B = 6V_{DC}, R_L = 13.5\Omega)$	$t_d$		0.1	$\mu\text{sec}$
		$t_s$	—	0.6	
		$t_r$	—	2.5	
		$t_f$		0.5	
<b>Cross Over Time</b> $(I_C = 15 \text{ A(pk)}, V_{CLAMP} = 450V, I_{B1} = 3 \text{ A}, V_{BE(off)} = 6V)$		$t_c$	—	0.5	$\mu\text{sec}$

**NOTES:**

\* Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle  $\leq 2\%$

1/ For Ordering Information, Price, and Availability Contact Factory.

2/ Screening per MIL-PRF-19500.

3/ For Package Outlines Contact Factory.

4/ Up and Down Bend Configurations Available for M and Z (TO-254 and TO-254Z) Packages Only.

5/ All Electrical Characteristics @ 25°C, Unless Otherwise Specified.

**NOTE:** All specifications are subject to change without notification.  
 SCD's for these devices should be reviewed by SSDI prior to release.

**DATA SHEET #: TR0019C**

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