

SEMICONDUCTOR TM

# KSD1417

# **High Power Switching Applications**

- High DC Current Gain
- Low Collector-Emitter Saturation Voltage
- Complement to KSB1022



1.Base 2.Collector 3.Emitter

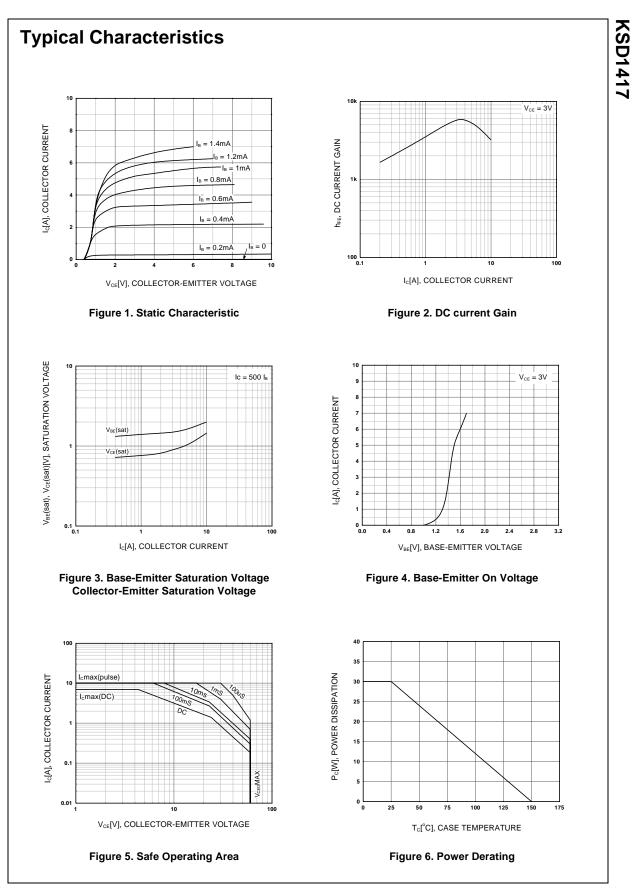
# **NPN Silicon Darlington Transistor**

# Absolute Maximum Ratings T<sub>C</sub>=25°C unless otherwise noted

Symbol	Parameter	Value	Units	
V <sub>CBO</sub>	Collector-Base Voltage	60	V	
V <sub>CEO</sub>	Collector-Emitter Voltage	60	V	
V <sub>EBO</sub>	Emitter-Base Voltage	5	V	
I <sub>C</sub>	Collector Current (DC)	7	А	
I <sub>CP</sub>	Collector Current (Pulse)	10	А	
I <sub>B</sub>	Base Current	0.7	Α	
P <sub>C</sub>	Collector Dissipation (T <sub>a</sub> =25°C)	2	W	
P <sub>C</sub> P <sub>C</sub>	Collector Dissipation (T <sub>C</sub> =25°C)	30	W	
TJ	Junction Temperature	150	°C	
T <sub>STG</sub>	Storage Temperature	-55 ~ 150	°C	

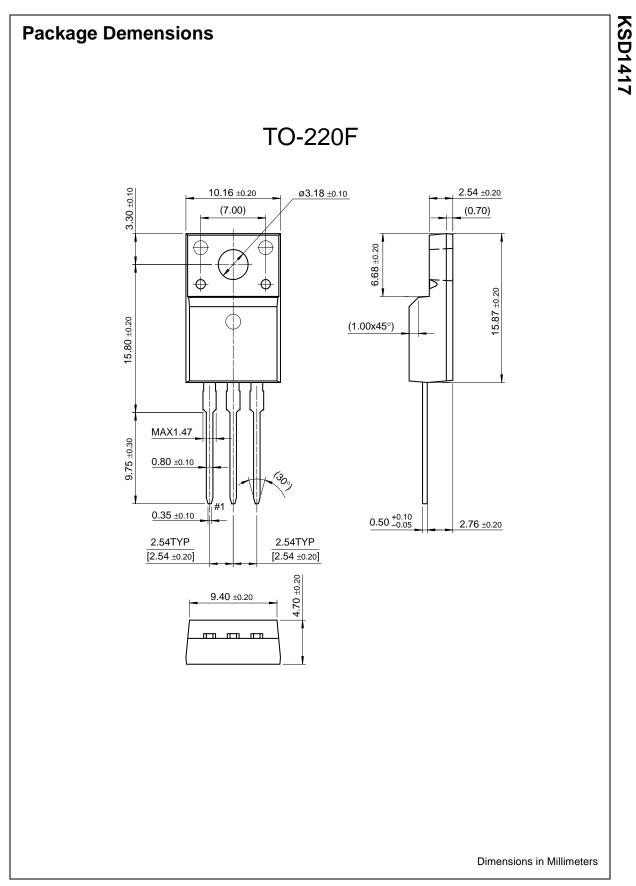
## Electrical Characteristics T<sub>C</sub>=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Тур.	Max.	Units
BV <sub>CEO</sub>	Collector-Emitter Breakdown Voltage	$I_{\rm C} = 50 {\rm mA}, I_{\rm B} = 0$	60			V
I <sub>CBO</sub>	Collector Cut-off Current	$V_{CB} = 60V, I_E = 0$			100	μΑ
I <sub>EBO</sub>	Emitter Cut-off Current	$V_{EB} = 5V, I_{C} = 0$			3	mA
h <sub>FE1</sub>	DC Current Gain	V <sub>CE</sub> = 3V, I <sub>C</sub> = 3A	2K		15K	
h <sub>FE2</sub>		$V_{CE} = 3V, I_{C} = 7A$	1K			
V <sub>CE</sub> (sat)	Collector-Emitter Saturation Voltage	$I_{C} = 3A, I_{B} = 6mA$		0.9	1.5	V
		$I_{\rm C} = 7$ A, $I_{\rm B} = 14$ mA		1.2	2	V
V <sub>BE</sub> (sat)	Base-Emitter Saturation Voltage	$I_{\rm C} = 3A, I_{\rm B} = 6mA$		1.5	2.5	V
t <sub>ON</sub>	Turn ON Time	$V_{CC} = 45V, I_C = 4.5A$		0.8		μs
t <sub>STG</sub>	Storage Time	$I_{B1} = -I_{B2} = 6mA$		3		μs
t <sub>F</sub>	Fall Time	$R_L = 10\Omega$		2.5		μs



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