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N-P-N EPITAXIAL PLANAR SILICON POWER TRANSISTOR

***electrical characteristics at 25°C case temperature (unless otherwise noted)**

	PARAMETER	TEST CONDITIONS		MIN	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	I_C = 50 mA, I_B = 0,	See Note 5	80		V
I_{CEO}	Collector Cutoff Current	V_{CE} = 60 V, I_B = 0			10	μA
I_{CES}	Collector Cutoff Current	V_{CE} = 90 V, V_{BE} = 0			5	μA
		V_{CE} = 90 V, V_{BE} = 0, T_C = 150°C			50	
I_{EBO}	Emitter Cutoff Current	V_{EB} = 5 V, I_C = 0			0.5	μA
		V_{EB} = 8 V, I_C = 0			10	
h_{FE}	Static Forward Current Transfer Ratio	V_{CE} = 2 V, I_C = 50 mA		30		
		V_{CE} = 2 V, I_C = 1 A,	See Note 5	40	120	
		V_{CE} = 5 V, I_C = 5 A,	See Note 5	15		
		V_{CE} = 2 V, I_C = 1 A, T_C = −55°C,	See Note 5	10		
V_{BE}	Base-Emitter Voltage	I_B = 100 mA, I_C = 1 A,	See Note 5	0.6	1.2	V
		I_B = 500 mA, I_C = 5 A,	See Note 5		1.6	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_B = 100 mA, I_C = 1 A,	See Note 5		0.25	V
		I_B = 500 mA, I_C = 5 A	See Note 5		2	
$\|h_{fe}\|$	Small-Signal Common-Emitter Forward Current Transfer Ratio	V_{CE} = 5 V, I_C = 1 A, f = 10 Mc/s		4		
C_{obo}	Common-Base Open-Circuit Output Capacitance	V_{CB} = 10 V, I_E = 0, f = 1 Mc/s			150	pF

NOTE 5: This parameter must be measured using pulse techniques: t_p = 300 μs, duty cycle ≤ 2%.

*** thermal characteristics**

	PARAMETER	MAX	UNIT
$\theta_{J\text{-}C}$	Junction-to-Case Thermal Resistance	3.33	deg/W
$\theta_{J\text{-}A}$	Junction-to-Free-Air Thermal Resistance	87.5	deg/W

***switching characteristics at 25°C case temperature**

	PARAMETER	TEST CONDITIONS†	MAX	UNIT
t_{on}	Turn-On Time	I_C = 1 A, $I_{B(1)}$ = 100 mA, $I_{B(2)}$ = −100 mA,	0.3	μs
t_{off}	Turn-Off Time	$V_{BE(off)}$ = −3.7 V, R_L = 20 Ω, See Figure 1	1.5	

†Voltage and current values shown are nominal; exact values vary slightly with transistor parameters.

*Indicates JEDEC registered data.

***mechanical data**