

Description

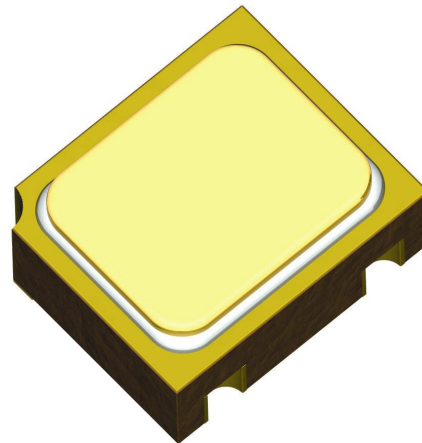
Semicoa Semiconductors offers:

- Screening and processing per MIL-PRF-19500 Appendix E
- JAN level (2N3227UBJ)
- JANTX level (2N3227UBJX)
- JANTXV level (2N3227UBJV)
- JANS level (2N3227UBJS)
- QCI to the applicable level
- 100% die visual inspection per MIL-STD-750 method 2072 for JANTXV and JANS
- Radiation testing (total dose) upon request

Please contact Semicoa for special configurations
www.SEMICOA.com or (714) 979-1900

Applications

- High-speed switching transistor
- Low power
- NPN silicon transistor



Features

- Hermetically sealed Cersot ceramic
- Also available in chip configuration
- Chip geometry 0005
- Reference document:
MIL-PRF-19500/317

Benefits

- Qualification Levels: JAN, JANTX, JANTXV and JANS
- Radiation testing available

Absolute Maximum Ratings		$T_c = 25^\circ\text{C}$ unless otherwise specified	
Parameter	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	20	Volts
Collector-Base Voltage	V_{CBO}	40	Volts
Emitter-Base Voltage	V_{EBO}	6	Volts
Power Dissipation, $T_A = 25^\circ\text{C}$ Derate linearly above 70°C	P_T	0.4 3.08	mW mW/ $^\circ\text{C}$
Thermal Resistance	$R_{\theta JA}$	325	$^\circ\text{C}/\text{W}$
Operating Junction Temperature	T_J	-65 to +200	$^\circ\text{C}$
Storage Temperature	T_{STG}	-65 to +200	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS

characteristics specified at $T_A = 25^\circ\text{C}$

Off Characteristics						
Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	I _C = 10 mA	20			Volts
Collector-Base Cutoff Current	I _{CBO1}	V _{CB} = 40 Volts			10	μA
	I _{CBO2}	V _{CB} = 32 Volts			0.2	
	I _{CBO3}	V _{CB} = 20 Volts, T _A = 150°C			30	
Collector-Emitter Cutoff Current	I _{CEX}	V _{CE} = 10Volts, V _{EB} = 0.25Volts T _A = 125°C			30	μA
Collector-Emitter Cutoff Current	I _{CES}	V _{CE} = 20 Volts			400	nA
Emitter-Base Cutoff Current	I _{EBO1}	V _{EB} = 6 Volts			10	μA
	I _{EBO2}	V _{EB} = 4 Volts			0.25	
On Characteristics			Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%			
Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
DC Current Gain	h _{FE1}	I _C = 10 mA, V _{CE} = 0.35 Volts	70		250	
	h _{FE2}	I _C = 30 mA, V _{CE} = 0.4 Volts	40		250	
	h _{FE3}	I _C = 10 mA, V _{CE} = 1 Volts	75		300	
	h _{FE4}	I _C = 100 mA, V _{CE} = 1 Volts	30		150	
	h _{FE5}	I _C = 10 mA, V _{CE} = 1 Volts T _A = -55°C	20			
Base-Emitter Saturation Voltage	V _{BEsat1}	I _C = 10 mA, I _B = 1 mA	0.70		0.85	Volts
	V _{BEsat2}	I _C = 30 mA, I _B = 3 mA			0.90	
	V _{BEsat3}	I _C = 100 mA, I _B = 10 mA	0.80		1.20	
	V _{BEsat4}	I _C = 10mA, I _B = 1mA, T _A =+125°C	0.50			
	V _{BEsat5}	I _C = 10mA, I _B = 1mA, T _A = -55°C			1.02	
Collector-Emitter Saturation Voltage	V _{CEsat1}	I _C = 10 mA, I _B = 1 mA			0.20	Volts
	V _{CEsat2}	I _C = 30 mA, I _B = 3 mA			0.25	
	V _{CEsat3}	I _C = 100 mA, I _B = 10 mA			0.45	
	V _{CEsat4}	I _C = 10mA, I _B = 1mA, T _A =+125°C			0.30	
Dynamic Characteristics						
Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Magnitude – Common Emitter, Short Circuit Forward Current Transfer Ratio	h _{FE}	V _{CE} = 10 Volts, I _C = 10 mA, f = 100 MHz	5		10	
Open Circuit Output Capacitance	C _{OBO}	V _{CB} = 5 Volts, I _E = 0 mA, 100 kHz < f < 1 MHz			4	pF
Open Circuit Input Capacitance	C _{IBO}	V _{EB} = 0.5 Volts, I _C = 0 mA, 100 kHz < f < 1 MHz			4	pF
Storage Time	t _s	I _C = 10 mA, I _{B1} =I _{B2} = 10 mA			18	ns
Saturated Turn-On Time	t _{ON}	I _C = 10 mA, I _{B1} = 3 mA, I _{B2} = 1.5 mA			12	ns
Saturated Turn-Off Time	t _{OFF}	I _C = 10 mA, I _{B1} = 3 mA, I _{B2} = 1.5 mA			25	ns