Low VCE(sat) Transistor, NPN, 60A

phones, PDAs, computers, printers, digital cameras and MP3 players. Other applications are low voltage motor controls in mass storage products such as disc drives and tape drives. In the automotive industry they can be used in air bag deployment and in the instrument cluster. The high current gain allows e²PowerEdge devices to be driven directly from PMU's control outputs, and the Linear Gain (Beta) makes them ideal components in analog amplifiers.

Features

- NSV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC Q101 Qualified and PPAP Capable
- These Devices are Pb Free, Halogen Free/BFR Free and are RoHS Compliant*
- Complementary to NSS60600MZ4

MAXIMUM RATINGS (T_A = 25°

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation $T_A = 25^{\circ}C$ Derate above $25^{\circ}C$	P _D (Note 1)	800 6.5	mW mW/°C
Thermal Resistance, Junction-to-Ambient	R _{θJA} (Note 1)	155	°C/W
Total Device Dissipation $T_A = 25^{\circ}C$ Derate above $25^{\circ}C$	P _D (Note 2)	2 15.6	W mW/°C
Thermal Resistance, Junction-to-Ambient	R _{θJA} (Note 2)	64	°C/W

Total Device Dissipation (Single Pulse < 10 sec.)

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Тур	Max	Unit
OFF CHARACTERISTICS					
Collector – Emitter Breakdown Voltage $(I_C = 10 \text{ mAdc}, I_B = 0)$	V _{(BR)CEO}	60	_	-	Vdc
Collector – Base Breakdown Voltage $(I_C = 0.1 \text{ mAdc}, I_E = 0)$	V _{(BR)CBO}	100	_	-	Vdc
Emitter – Base Breakdown Voltage ($I_E = 0.1 \text{ mAdc}, I_C = 0$)	V _{(BR)EBO}	6.0	_	_	Vdc
Collector Cutoff Current ($V_{CB} = 100 \text{ Vdc}, I_E = 0$)	I _{CBO}	_	_	0.1	μAdc
Emitter Cutoff Current (V _{EB} = 6.0 Vdc)	I _{EBO}	_	_	0.1	μAdc
ON CHARACTERISTICS					
$ \begin{array}{l} \text{DC Current Gain (Note 4)} \\ (I_{C} = 500 \text{ mA}, \text{V}_{CE} = 2.0 \text{ V}) \\ (I_{C} = 1.0 \text{ A}, \text{V}_{CE} = 2.0 \text{ V}) \\ (I_{C} = 2.0 \text{ A}, \text{V}_{CE} = 2.0 \text{ V}) \\ (I_{C} = 6.0 \text{ A}, \text{V}_{CE} = 2.0 \text{ V}) \end{array} $	h _{FE}	150 120 100 50	- - - -	 360 	-
$\label{eq:constraint} \begin{array}{ c c c c c } \hline Collector-Emitter Saturation Voltage (Note 4) \\ (I_C = 0.1 \ A, \ I_B = 2.0 \ mA) \\ (I_C = 1.0 \ A, \ I_B = 0.100 \ A) \\ (I_C = 2.0 \ A, \ I_B = 0.200 \ A) \\ (I_C = 3.0 \ A, \ I_B = 60 \ mA) \\ (I_C = 6.0 \ A, \ I_B = 0.6 \ A) \end{array}$	V _{CE(sat)}	- - - -	 0.045 0.085 	0.040 0.060 0.100 0.220 0.300	V
Base – Emitter Saturation Voltage (Note 4) $(I_C = 1.0 \text{ A}, I_B = 0.1 \text{ A})$	V _{BE(sat)}	-	_	0.900	V
Base – Emitter Turn–on Voltage (Note 4) $(I_C = 1.0 \text{ A}, V_{CE} = 2.0 \text{ V})$	V _{BE(on)}	_	_	0.900	V
Cutoff Frequency ($I_C = 500 \text{ mA}, V_{CE} = 10 \text{ V}, f = 1.0 \text{ MHz}$)	f _T	100	_	_	MHz
Input Capacitance (V _{EB} = 5.0 V, f = 1.0 MHz)	Cibo	-	400	-	pF
Output Capacitance (V _{CB} = 10 V, f = 1.0 MHz)	Cobo	-	37	-	pF
SWITCHING CHARACTERISTICS					
Delay (V _{CC} = 30 V, I _C = 750 mA, I _{B1} = 15 mA)	t _d	-	85	-	ns
Rise (V_{CC} = 30 V, I_{C} = 750 mA, I_{B1} = 15 mA)	tr	-	115	-	ns
Storage (V _{CC} = 30 V, I _C = 750 mA, I _{B1} = 15 mA)	t _s	-	1350	-	ns
Fall (V _{CC} = 30 V, I _C = 750 mA, I _{B1} = 15 mA)	t _f	-	125	-	ns

4. Pulsed Condition: Pulse Width = 300 msec, Duty Cycle \leq 2%.



TYPICAL CHARACTERISTICS





TYPICAL CHARACTERISTICS



DATE 02 OCT 2018



	MILLIMETERS			
DIM	MIN.	NDM.	MAX.	
A	1.50	1.63	1.75	
A1	0.02	0.06	0.10	
b				
D	6.30	6.50	6.70	
E	3.30	3.50	3.70	
e	2.30 BSC			

2





DATE 02 OCT 2018





- A = Assembly Location
- Y = Year
- W = Work Week
- XXXXX = Specific Device Code
- = Pb Free Package
- (Note: Microdot may be in either location) *This information is generic. Please refer to device data sheet for actual part marking. Pb Free indicator, "G" or microdot "•", may or may not be present. Some products may not follow the Generic Marking.

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