

KSC2383 NPN Epitaxial Silicon Transistor



Ordering Information

Part Number	Top Mark	Package	Packing Method
KSC2383OTA	C2383 O-	TO-92 3L	Ammo
KSC2383YTA	C2383 Y-	TO-92 3L	Ammo

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_A = 25^{\circ}\text{C}$ unless otherwise noted.

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	160	V
V _{CEO}	Collector-Emitter Voltage	160	V
V _{EBO}	Emitter-Base Voltage	6	V
I _C	Collector Current	1	Α
I _B	Base Current	0.5	Α
TJ	Junction Temperature	150	°C
T _{STG}	Storage Temperature	-55 to +150	°C

Thermal Characteristics(1)

Values are at $T_A = 25$ °C unless otherwise noted.

Symbol	Parameter	Value	Unit
P _D	Power Dissipation	900	mW
	Derate Above 25°C	7.2	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	138	°C/W

Note:

1. PCB size: FR-4, 76 mm x 114 mm x 1.57 mm (3.0 inch x 4.5 inch x 0.062 inch) with minimum land pattern size.

Electrical Characteristics

Values are at $T_A = 25$ °C unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Тур.	Max.	Unit
I _{CBO}	Collector Cut-Off Current	V _{CB} = 150 V, I _E = 0			1	μΑ
I _{EBO}	Emitter Cut-Off Current	$V_{EB} = 6 \text{ V}, I_{C} = 0$			1	μΑ
BV _{CEO}	Collector-Emitter Breakdown Voltage	$I_C = 10 \text{ mA}, I_B = 0$	160			V
h _{FE}	DC Current Gain	$V_{CE} = 5 \text{ V}, I_{C} = 200 \text{ mA}$	60		320	
V _{CE} (sat)	Collector-Emitter Saturation Voltage	$I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$			1.5	V
V _{BE} (on)	Base-Emitter On Voltage	$V_{CE} = 5 \text{ V}, I_{C} = 5 \text{ mA}$	0.45		0.75	V
f _T	Current Gain Bandwidth Product	$V_{CE} = 5 \text{ V}, I_{C} = 200 \text{ mA}$	20	100		MHz
C _{ob}	Output Capacitance	V _{CB} = 10 V, I _E = 0, f = 1 MHz			20	pF

h_{FE} Classification

Classification	R	0	Y
h _{FE}	60 ~ 120	100 ~ 200	160 ~ 320

Typical Performance Characteristics

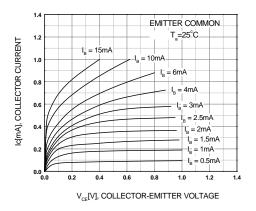


Figure 1. Static Characteristic

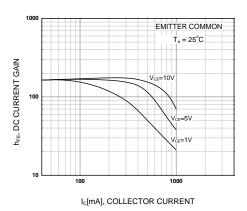


Figure 3. DC Current Gain

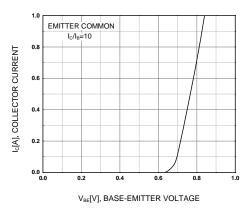


Figure 5. Base-Emitter On Voltage

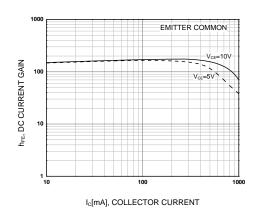


Figure 2. DC Current Gain

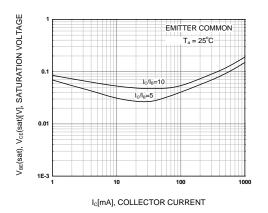


Figure 4. Collector-Emitter Saturation Voltage

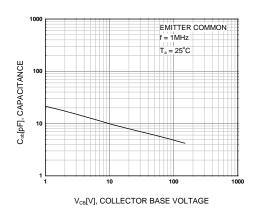


Figure 6. Collector Output Capacitance

Typical Performance Characteristics (Continued)

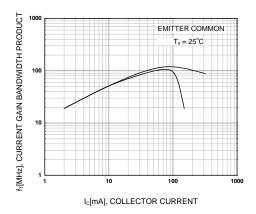


Figure 7. Current Gain Bandwidth Product

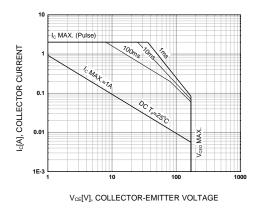


Figure 8. Safe Operating Area

ON Semiconductor and in are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using ON Semiconductor products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. ON Semiconductor does not convey any license under its patent rights nor the rights of others. ON Semiconductor products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use ON Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hol

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:

Literature Distribution Center for ON Semiconductor 19521 E. 32nd Pkwy, Aurora, Colorado 80011 USA Phone: 303-675-2175 or 800-344-3860 Toll Free USA/Canada Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada Email: orderlit@onsemi.com N. American Technical Support: 800-282-9855 Toll Free USA/Canada Europe, Middle East and Africa Technical Support: Phone: 421 33 790 2910

Phone: 421 33 790 2910

Japan Customer Focus Center
Phone: 81–3–5817–1050

ON Semiconductor Website: www.onsemi.com

Order Literature: http://www.onsemi.com/orderlit

For additional information, please contact your local Sales Representative