

MPS-U03 (SILICON)

MPS-U04

NPN silicon annular plastic transistors designed for video output circuits utilizing an emitter-follower driver and for horizontal driver applications in television receivers.



STYLE 1:
PIN 1. EMITTER
2. BASE
3. COLLECTOR

CASE 152-02

Collector connected to tab

MAXIMUM RATINGS

Rating	Symbol	MPS-U03	MPS-U04	Unit
Collector-Emitter Voltage	V_{CEO}	120	180	Vdc
Collector-Base Voltage	V_{CB}	120	180	Vdc
Emitter-Base Voltage	V_{EB}	5.0		Vdc
Collector Current — Continuous	I_C	1.0		Adc
Total Power Dissipation @ $T_A = 25^\circ\text{C}$	P_D	1.0		Watt
Derate above 25°C		8.0		mW/ $^\circ\text{C}$
Total Power Dissipation @ $T_C = 25^\circ\text{C}$	P_D	10		Watts
Derate above 25°C		80		mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-55 to +150		$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage ($I_C = 1.0 \text{ mA}$, $I_B = 0$)	MPSU03 MPSU04	BV_{CEO}	120 180	- -	Vdc
Collector-Base Breakdown Voltage ($I_C = 100 \mu\text{A}$, $I_E = 0$)	MPSU03 MPSU04	BV_{CBO}	120 180	- -	Vdc
Emitter-Base Breakdown Voltage ($I_E = 100 \mu\text{A}$, $I_C = 0$)		BV_{EBO}	5.0	-	Vdc
Collector Cutoff Current ($V_{CB} = 100 \text{ Vdc}$, $I_E = 0$)	MPSU03	I_{CBO}	-	0.1	μA
($V_{CB} = 150 \text{ Vdc}$, $I_E = 0$)	MPSU04		-	0.1	

ON CHARACTERISTICS

DC Current Gain ($I_C = 10 \text{ mA}$, $V_{CE} = 10 \text{ Vdc}$)		h_{FE}	40	-	-
Collector-Emitter Saturation Voltage ($I_C = 200 \text{ mA}$, $I_B = 20 \text{ mA}$)		$V_{CE(sat)}$	-	0.5	Vdc
Base-Emitter On Voltage ($I_C = 200 \text{ mA}$, $V_{CE} = 1.0 \text{ Vdc}$)		$V_{BE(on)}$	-	1.0	Vdc

DYNAMIC CHARACTERISTICS

Current-Gain-Bandwidth Product ($I_C = 50 \text{ mA}$, $V_{CE} = 20 \text{ Vdc}$, $f = 100 \text{ MHz}$)		f_T	100	-	MHz
Output Capacitance ($V_{CB} = 10 \text{ Vdc}$, $I_E = 0$, $f = 100 \text{ kHz}$)		C_{ob}	-	12	pF
Input Capacitance ($V_{BE} = 0.5 \text{ Vdc}$, $I_C = 0$, $f = 100 \text{ kHz}$)		C_{ib}	-	110	pF